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VOL. XXVII

June, 1919

No. 3

### Practice Economy on the Building Job

IN commenting on the present cost of building, an officer of the U. S. Housing Corporation, which erected many thousands of homes for workmen during the war, recently said that a goodly portion of this increased cost had been absorbed on the government building projects thru more efficient methods of doing the work and the use of equipment wherever possible. In other words, the saving made by the correct use of energy and equipment partially offset the increased cost of labor and materials.

This statement should challenge the attention of every member of the building industry. If there are ways by which buildings can be erected more cheaply and at the same time as well, these methods should be adopted.

An illustration of how this saving was made on the government housing jobs is found in the fact that the carpenters always had a power saw at hand. Another is that the materials always were unloaded as near as possible to the point where they were to be used. For instance, window frames were not piled in an out-of-the-way place until such time as they were needed. They were brought to the job at about the time they were to be put in place and unloaded at the right spots around the building.

In these ways there was no loss of the men's time and no duplication of effort.

The large amount of home and other building that will be done this year makes it necessary that every building contractor have the equipment that will enable him to do his work as economically as possible. There is no economy in doing by hand what can be done by machinery. This is true whether it be sawing, mixing concrete or hoisting materials into place.



### Crystallizing the Home Building Sentiment

NOTHING so sharpens the appetite that everyone has for a home as a view of what that home will look like and how it will be arranged. The AMERICAN BUILDER in this issue is presenting some extraordinary home designs in two colors. In the July issue this work of creating a desire for a home will be dealt with even more extensively. An announcement of what the July issue will be is found in the four-page colored section in the preceding pages.

Both the June and the July issues will be exceptionally valuable to the AMERICAN BUILDER Family as aids in promoting home building. The home designs in colors will help contractors and material men crystallize the home building idea into contracts. Use them and gain the business that these designs will promote.

## How to Cut the High Cost of Building

OR MAKING THE HOME SPACE WORK DOUBLE—THE MODERN TYPE OF SMALL FLAT BUILDING

IN the past two or three years the development of the modern type of apartment hotel east of the Rockies, and especially in Chicago, has been wonderful. Millions of dollars have been invested in this type of building, and in each and every case they have proved a great success from a revenue producing standpoint, and for the tenants as well.

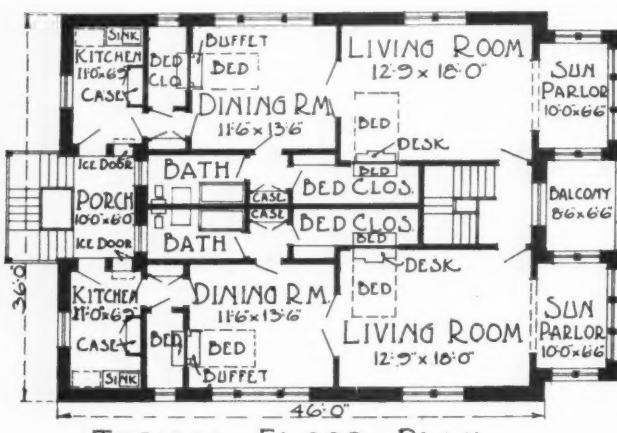
Why do such type of buildings pay and pay well, even when constructed at the present high cost of labor and materials? Because of the modern concealed bed. By adopting this latest innovation, the

into sleeping quarters. Your bed is as sanitary and comfortable as any ordinary one. You have direct access to the bath from each room; you have all the conveniences of "my lady's boudoir" in the small dressing room behind the bed, which is properly concealed during the day. And you are sleeping in the best ventilated rooms of the house.

When it comes to furnishing such a flat, the tenant is greatly benefited. The owner supplies the bed. The tenant only has to buy the mattress and bedding, and a dresser about completes the tenant's purchasing for the bedroom of a typical modern flat.

Then the housewife is made happier because of the reduced work. What a drudgery it has always been to keep the bedroom clean. What a job to sweep under the bed. What a lot of work to take the bedding all off and tip the bed up so that it could be thoroly cleaned now and then. Do you wonder the wife is FOR this new type of home? She has no bedroom to clean. She tips the bed up every morning with as much ease as lifting a basket of groceries, and she can thoroly ventilate the bed during the day by opening the window in the dressing room, yet not make all the rest of the house cold. In this way the tenant saves fuel. He also keeps the coal bill down by not having to heat unused rooms all day; a room which, when you do use it, as a rule you don't want to heat at all.

And all this is possible because of the modern type of concealed bed. Get busy, Mr. Builder, and construct more of these cozy homes. The country needs them, the people want them, and you need the money. They will earn more for you than the old style flat.



TYPICAL FLOOR PLAN

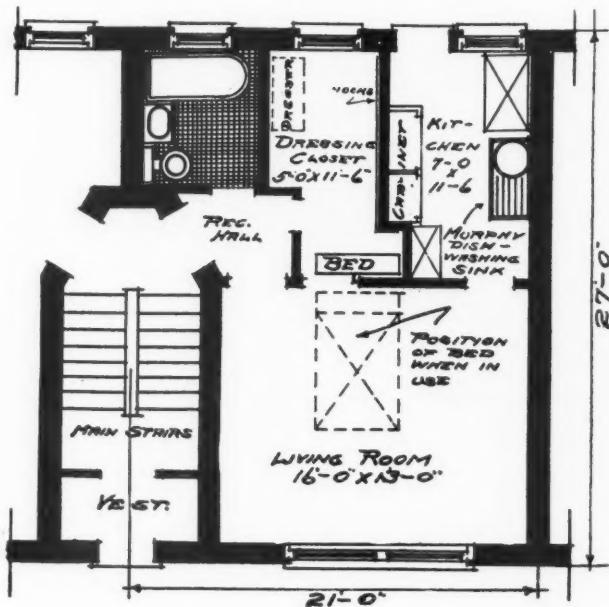
A Three-Room Apartment Becomes a Five-Room Apartment by Having Concealed Beds in Living and Dining Rooms.

bedroom is eliminated entirely and therefore the cost of construction is reduced very materially, and yet at no loss to the convenience and comfort of the guest. A bedroom is only used a small portion of the time, and even when in use, the room itself is given but little thought. There are exceptional instances, of course, but speaking as a general rule the above statement is correct. Then why add that cost to your building?

If a man who pays \$75.00 to \$200.00 per month for a two-room suite in an apartment hotel is willing to do without a bedroom, why not the tenants of the small flat? They will. In California, yes in different cities of the Middle West, there are thousands of such small flats.

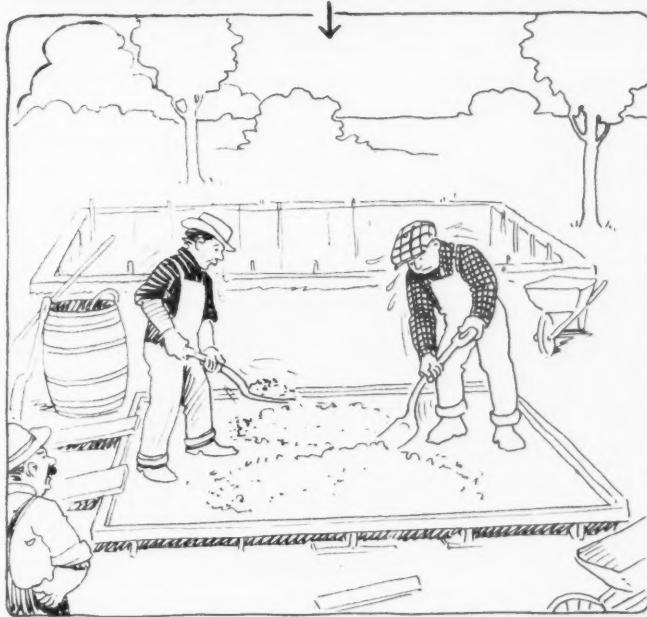
The accompanying floor sketch of a model four-flat building of this type shows its possibilities. Here we have in the space usually occupied by three rooms, all the conveniences of a five-room flat. In the daytime there is absolutely no suggestion of a bed in either the living or dining rooms. The rooms are thrown together, giving the flat a large, airy appearance; or, if you wish, the sliding doors can be closed and the rooms separated.

At night, "with a twist of the wrist," as it were, you convert both of these large, well ventilated rooms

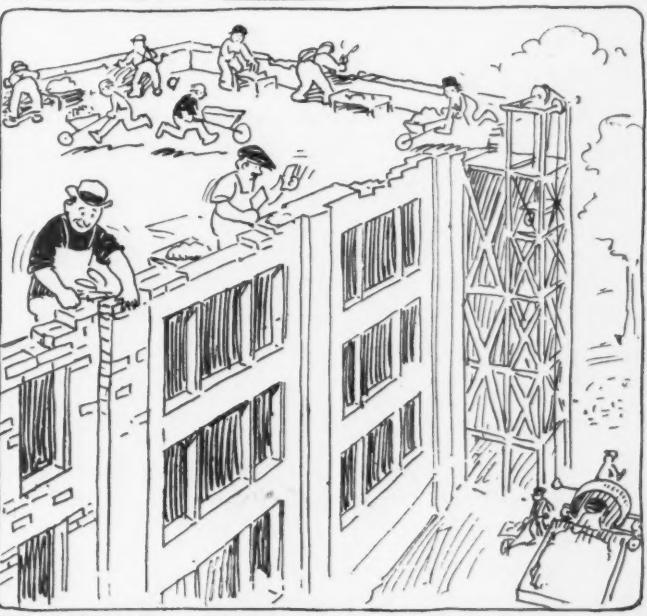
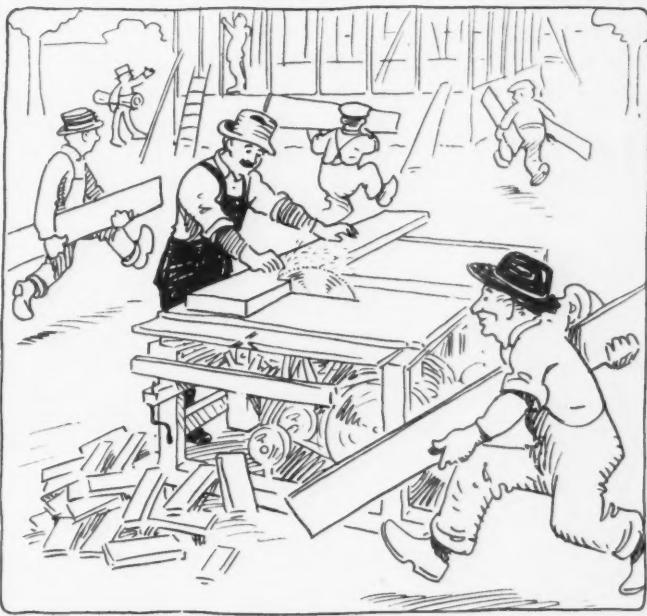
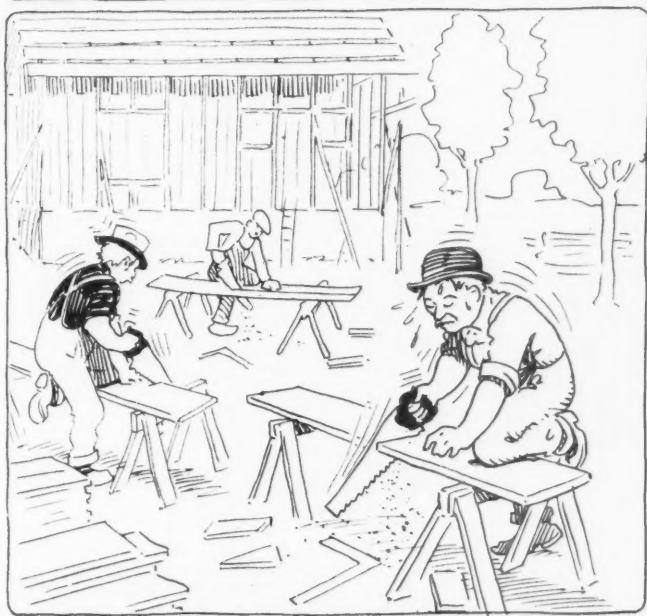
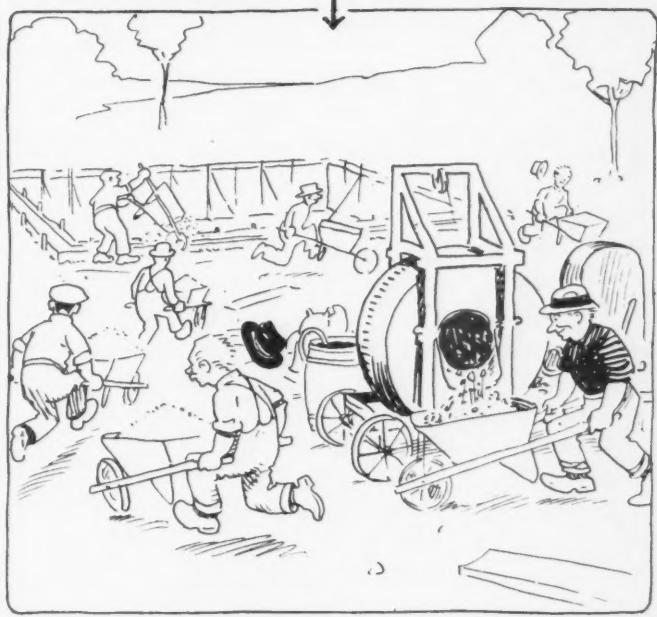


Two-Room Apartment with Efficiency of Four Rooms Thru Use of a Concealed Bed and Using Living Room as Dining Room.

## THE OLD COSTLY WAYS



## THE MODERN ECONOMICAL WAYS



How Our Cartoonist Views the Old and New Ways of Building.

## “Always on the Job” Is This Contractor’s Recipe for Success

A CARPENTER FOR EIGHTEEN YEARS, GEORGE E. DODGE, OF STAMFORD, CONN., BECAME A CONTRACTOR AND HAS MADE A NOTABLE SUCCESS—HERE IS HIS STORY

**S**UCCESS—business success—mostly is personal success. The successful contractor makes his success thru his personal efforts. And when it is considered that, according to business statistics of the United States, only seven of every 100 men who embark in a business enterprise are successful, or, at least, are in business at the end of ten years, it is worth while to know how the minority achieved their success.

George E. Dodge, of Stamford, Conn., is a successful contractor. Mr. Dodge has been in the contracting business for ten years. During those ten years he has built several hundred houses, besides other buildings. He began twenty-eight years ago as an apprentice carpenter, became a journeyman, and after eighteen years of experience entered the contracting business.

### Mr. Dodge’s Basis for Success

Recently Mr. Dodge was asked to what he ascribes his success. His answer contained these four words:

“Always on the job.”

Taking Mr. Dodge’s reply literally, one would be led to believe that he means that he devotes all his time on the building job, but a contractor cannot build several hundred houses in ten years and spend all of his time “on the job.” Instead, his terse “Always on the job” means that he uses his brains. And in using his brains he has adopted modern methods and modern equipment to give his clients good buildings, well planned and well constructed.

On the opposite page is a reproduction of a photograph showing Mr. Dodge “on the job.” And it’s a mighty good-looking Dutch Colonial house that he is building—the type of home that the AMERICAN BUILDER has been advocating for years and still is in its Portfolio of Blue Printed Beautiful Homes and in its blue print supplement. But what is most interesting is the fact that Mr. Dodge and his force of men erected this house in thirty working days.

### Built this Fine Dutch Colonial in 30 Days

“I built this house in thirty days by using the saw rig shown in the foreground of the photograph,” says Mr. Dodge.

“I started excavating May 31 and finished the job complete July 1. The tenant moved in July 5. From

the time I started framing there were twenty-four working days.

“It was the saw rig that enabled me to complete this house in one month. Because I had it I could use up all the scrap lumber. This saved me considerable. I did not have enough waste lumber to pay to cart away at the end of the job.

“I used to have a lot of waste lumber from 2 to 6 feet long. Now I put these on the portable saw and cut them into all sizes necessary for blocking, bridging and furring. I don’t order lumber for bridging any more. This saw rig averages better than two extra men day in and day out, right thru my jobs.”

Mr. Dodge uses a small concrete mixer in putting in the foundations of the buildings he erects. “And I could not get along without it,” he says.

### Builds Substantially and Builds Well

During the ten years he has been in the contracting business, Mr. Dodge has been located at Springfield, Mass., New Rochelle, N. Y., and Stamford, Conn., and in all three cities has built for himself an enviable reputation. The houses he builds are good houses—modern in design and substantially constructed. He gives his clients the most possible for their money and makes a

good profit for himself by doing his work economically and well. The economy Mr. Dodge uses in his construction work is the saving that is secured by having the proper equipment to do the work at the least cost. That’s how he is “always on the job.” He uses his brains, rather than his hands.

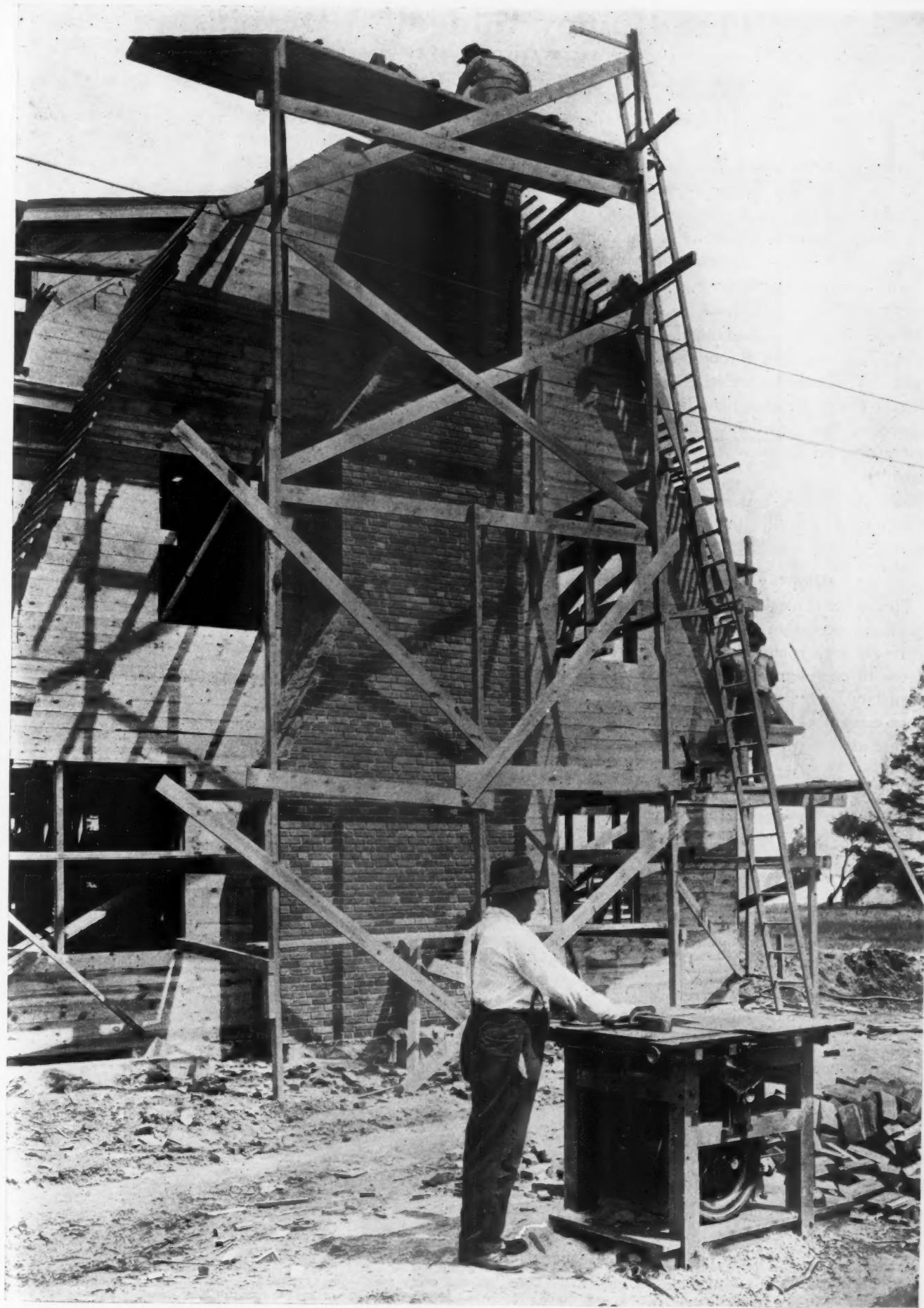
There is another outstanding fact in the story of Mr. Dodge’s success. That is, he gained the experience in construction work as the carpenter.

### Every Carpenter a Potential Contractor

The reason for this story of Mr. Dodge’s success as a contractor is that it is inspirational. Nothing that one man has accomplished is impossible to another man. There are thousands of young men beginning today where Mr. Dodge began twenty-eight years ago—as apprentices. There are many other thousands of men who have been carpenters for fifteen or sixteen years who can become successful contractors. Their experience has been such as to make them know the right way to build and the economical way to build.



George E. Dodge.



George E. Dodge, Stamford, Conn., and His Crew at Work on the Fine Dutch Colonial Home He Finished in Thirty Days. Building Homes Like This Well and "Being on the Job" Are the Reasons Mr. Dodge Gives for His Success as a Contractor. Mr. Dodge's Story Is on the Preceding Page.

## Fine Homey Bungalow Design

PERSPECTIVE AND FLOOR PLAN OF CONSERVATIVE TYPE OF MODERN HOME SHOWN ON NEXT PAGE

By Herbert C. Crocker

HERE'S a good looking and cozy six-room bungalow, with lots of basement and attic space as well as ample closets. It has been built for \$3,000 and during the present cost for material and labor may be duplicated for \$4,000 to \$4,500 in various localities, according to the contractor.

The roof is a little higher than in most bungalows, helping in attic space, and giving a better general appearance.

The dimensions of the bungalow are 29 feet 6 inches by 43 feet, with an 8-foot 6-inch porch across the front. The outside finish is stucco, with a pebble effect. The home contains a living room, library, dining room, two bedrooms and a kitchen. There is practically no lost space. All conveniences are provided.

One of the very convenient features is a rear hall. It permits an entrance to four rooms, beside the bathroom and attic and has a large linen closet.

### How the Home Was Planned

The owner is mechanically inclined. In planning for the home pieces of cardboard were cut to scale to represent each room and put together. Then smaller pieces to represent a piano, couches, beds and other furnishings were made. The places for the registers were carefully determined in the cardboard plan, so lumber used near them could be more thoroughly seasoned.

When the home was finished and the furniture installed the couple found that everything fitted exactly.

The entrance to the home is directly into the large living room.

The living room has a cheerful fireplace. It is fitted with a shaker and andirons and the ashes are deposited into a pit in the basement. The cabinets at each side of the mantel are made deep enough to accommodate music rolls for a player piano.

The buffet in the dining room is built in.

### Has All the Conveniences

The cupboard and sink are located in the pantry between the dining room and kitchen and found a great convenience. Work before and after meals is more concentrated and many steps are saved. There is a work table at the left of the cupboard. It may be used in serving. Bins for flour and meal as well as drawers for linens are made in the lower portion of the cupboard.

A gas range and a fireless cooker are used in the kitchen, but a double chimney for the furnace makes room for a coal stove if desired.

The library is amply large for a couch, easy chairs and a reading table.

Both bedrooms have spacious closets that are accessible and convenient.

The bathroom has a tiled floor. The bath tub sides are flush with the floor, eliminating dust under it. A clothes chute is built in the rear hall and clothes may land in the laundry below. This clothes chute also opens from the hall.

The plumbing is well concentrated and results in a saving of time in construction, as well as material.

Entrance to the second floor is from the living room. A greater portion of the attic is floored and head high. It is large enough for two good-sized rooms and may be used for drying clothes and storage purposes.

There are two entrances to the basement, one from the rear hall and the other from the rear porch.

The eaves project well over the house, providing shade, especially for the rear porch, until well into the afternoon.

The builder installed double floors with heavy paper between. He finds the additional cost a real saving in keeping dust from the basement out of the house.

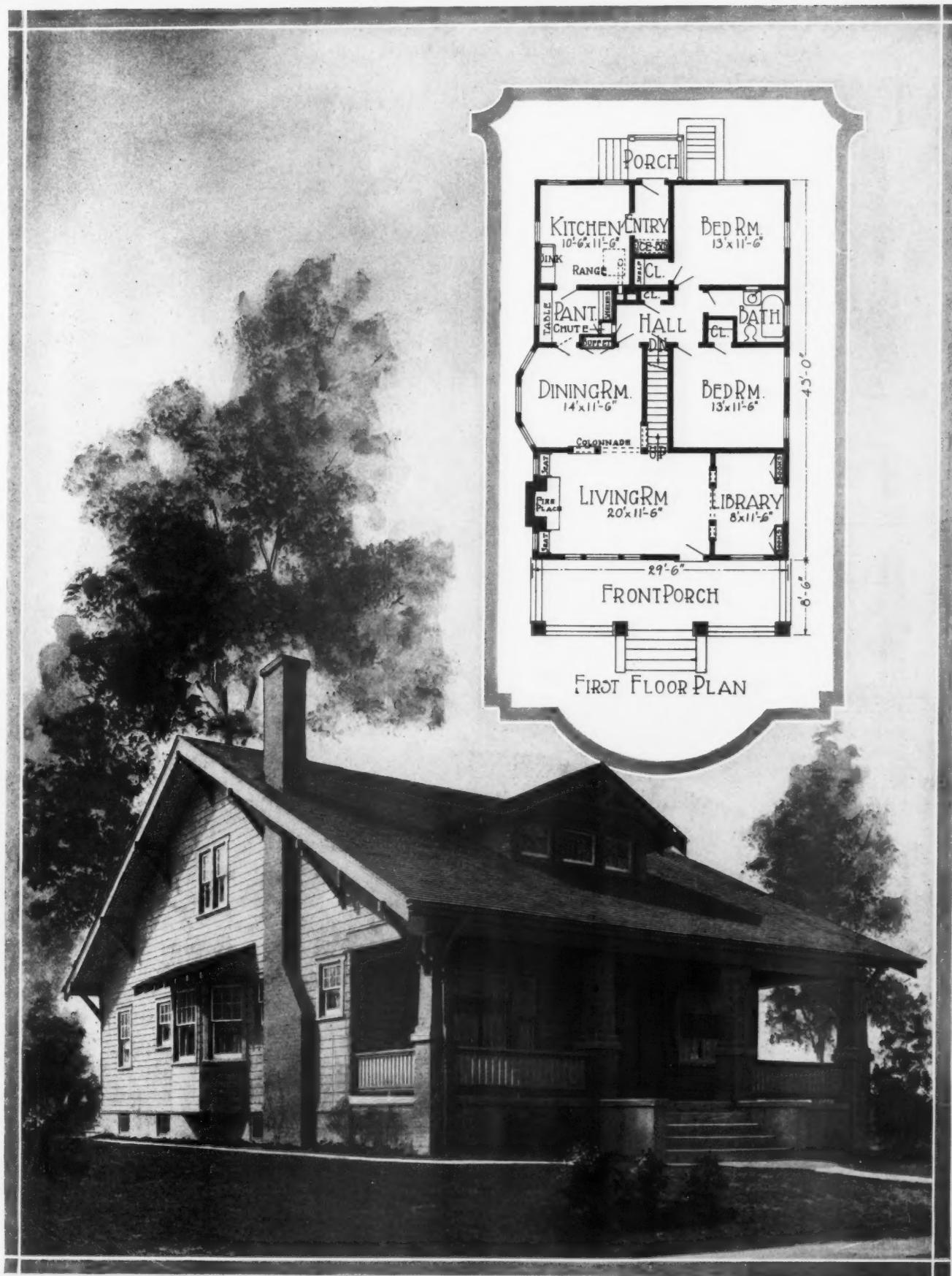
This dwelling has been given a severe test for weather ranging from 120 degrees in summer to 20 degrees below zero in winter. It was found comfortably cool in summer and warm enough during the winter.



COZY BREAKFAST NOOK. Labor-saving devices are numerous. It is seldom, however, that one can look upon an entire room as a labor-saving device. This is true, however, of the little breakfast room fitted up as shown in the illustration. Any small and sunshiny alcove can be converted into this cozy, cheerful breakfast room with a stationary table and two seats, which will accommodate six persons.—Fred Telford.

## An Excellent Bungalow

53



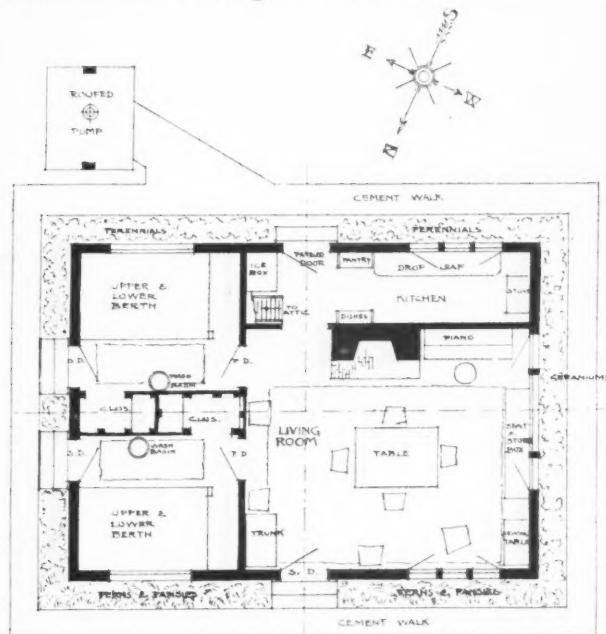
**SIX-ROOM HOMEY BUNGALOW.** Here is a fine example of the conservative type of bungalow. The long sweep of the roof, which extends over the porch across the front of the house, together with the dormer window, give it a fine appearance. The six rooms consist of a living room, dining room, library, two bedrooms, kitchen and bath. Both the library and dining room are connected with the living room by colonnades, which gives an air of spaciousness. The dimensions are 29 feet 6 inches by 43 feet, with a porch projection of 8 feet 6 inches. This is an exceptionally good home design.

## “Marine Architecture” in a Summer Cottage

By E. S. Hanson

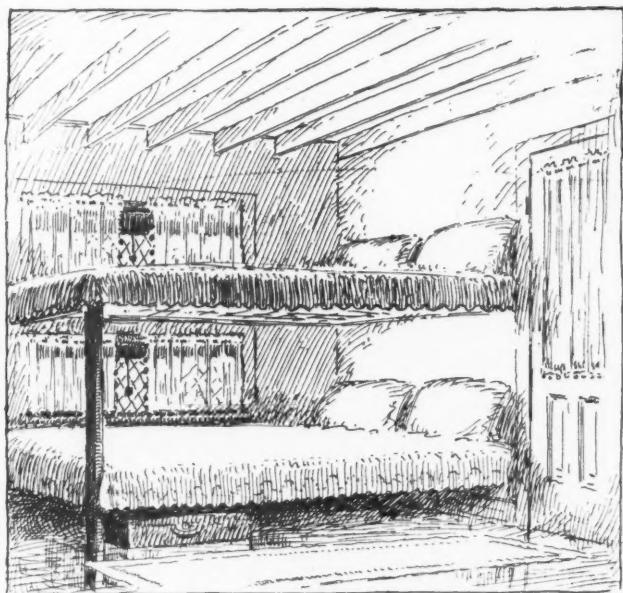
**M**OST of our work harks back to a prototype. We may be copyists pure and simple; or we may convert old ideas to new uses.

In this latter class might be placed Allen M. Weary, a Chicago artist. For several seasons this man traveled on the lake boats to and from the Michigan summer resorts; so it is perhaps scarcely to be wondered at that when art brought its due reward and he was



All the Space Conservation on a Lake Steamer Was Obtained by the Builder of This House. Note the Narrow Kitchen, Patterned After the Ship's "Galley," and the Double-Deck Beds.

ready to build a modest little summer cottage of his own, his imagination went back to the compactness and economy of living quarters on the boat, serving to



Here Is a Pen Sketch of the Beds, Planned After the Berths on a Passenger Boat. There Are Times, Perhaps—But Then Who Cares When on a Joyous Summer Vacation, and, Besides, Consider Your Proximity to the Others in a Sleeping Car.

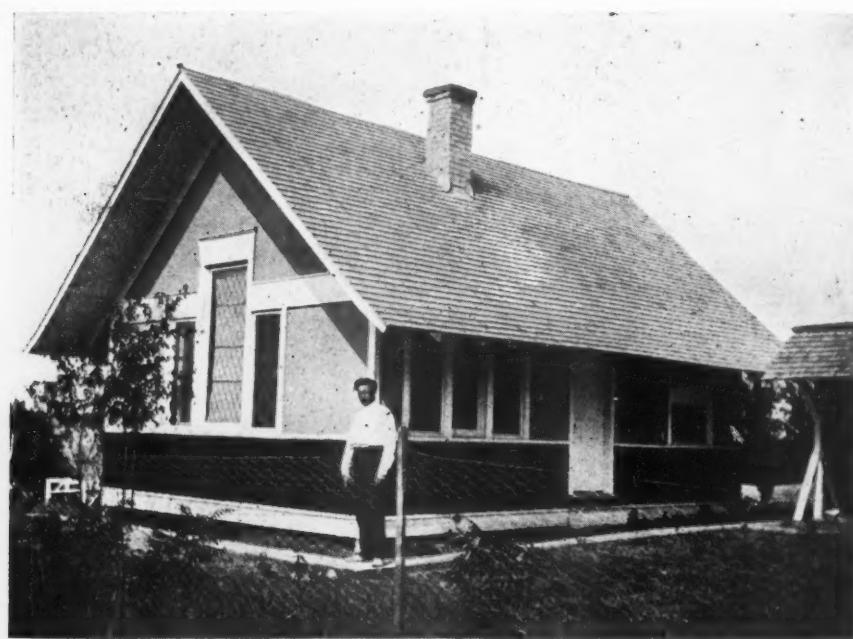
influence his design to a marked degree.

The long, narrow kitchen, for instance, is unmistakably a “man's” kitchen—a veritable ship's scullery set down on land. Of course you may say that such a kitchen might just have happened, but there is no mistaking the “state rooms” with their upper and lower berths. These rooms will be characterized by some as positively heathenish. Why, they will exclaim, should a person care to go to the lakeside for the summer, if he is to be cooped up in such a place as that every night!

Mr. Weary is accustomed to hearing these exclamations, and they do not worry him in the least. For he knows how the breezes blow across White Lake, just a few feet away; how the doors can be left open without fear of “wild beasts or still wilder men” breaking thru the screens. And as a clincher he points out that each berth has its own private “port hole” or individual window, thru which an additional supply of air can be secured when needed.

Then there is the living room, with seemingly a place for everything—tho as there are some young folks in the family it may not always be possible to find everything in its place.

This living room is really a “homey” place, with its ceiling running up to the rafters, its exposed chimney ascending from the squat fireplace, its exquisite casement

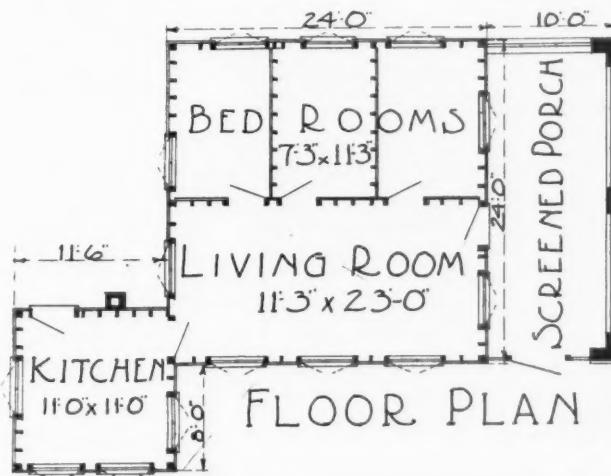


This Is the Summer Home Allen M. Weary, a Chicago Artist, Designed and Built on the Shore of White Lake, Mich. The Interior Arrangement Was Suggested by the Boats Mr. Weary Traveled on Before He had a Summer Home of His Own.

windows of leaded glass. In fact, this type of window prevails thruout the house, serving to add to it one more touch of distinction. The chairs are mostly folding chairs, so that they can be set out of the way for social gatherings, or carried conveniently to the beach.

The living room measures 12 feet 3 inches by 14 feet 6 inches, but is so arranged as to seem much larger, while the kitchenette is the same length and a little less than 4 feet wide. The staterooms are each 7 feet by 8 feet 2 inches.

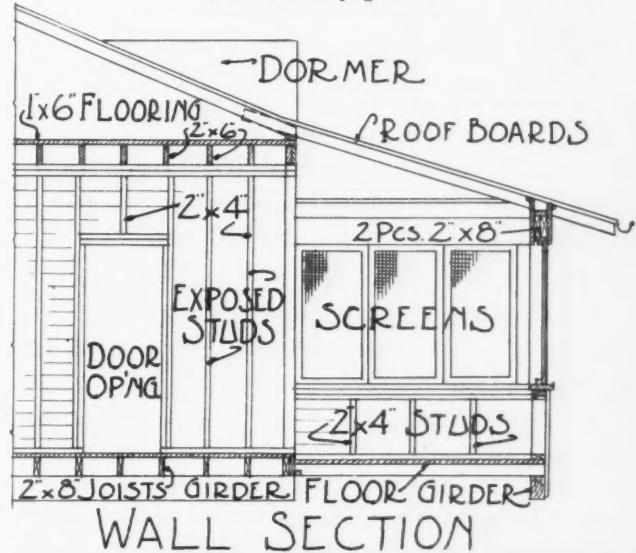
And it is worth while to tell a little more about



The Interior of the Cottage Shown Below Contains Five Rooms—a Large Living Room, Three Bedrooms and a Good-Sized Kitchen, Not to Count the Large Screened-in Porch. Accommodations for a Large Party Here Are Provided.

these staterooms. They are as simple as can be, each berth consisting merely of a full-size spring covered with a sanitary couch mattress. The spring is fastened to a ribbon board nailed to the wall on two sides of the room, while a post supports the free corner. The space under the lower bunk affords a storage for baggage, as in a real steamship. Regular steamer wash-stands are also supplied, with pails underneath to catch the slops. A mirror is placed on the wall at either side of the wash basin, so that two people can dress at the same time.

(Continued to page 170.)



Wall Section of the Summer Cottage Shown in the Illustration at the Bottom of the Page.



Here Is a Design for a Pretty and Comfortable Summer Cottage. It is as Good to Live in as It Is to Look at. Note the Large Screened-in Porch, the Big Living Room, Where at Night the Occupants Are Safe From Mosquitos. Such a Cottage Makes an Ideal Place for a Vacation. This Is the Season When Builders Are Called on to Erect Such Cottages. This Design Will Please Many Who Like the Outdoor Life.

## Sun Parlor and Sleeping Porch Modernize Old Homes

BUILDERS GET PROFITABLE JOBS ADDING UP-TO-DATE FEATURES TO HOMES—HOW TO BUILD THEM

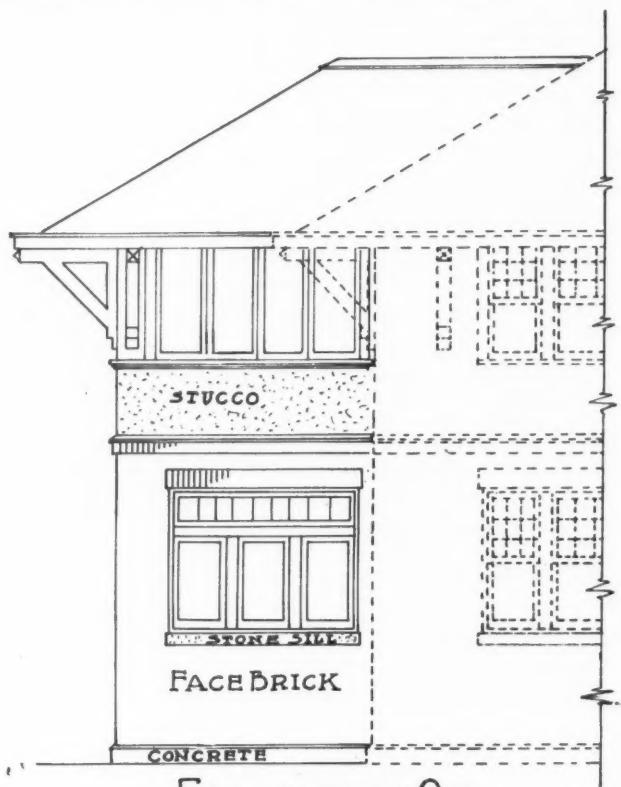
THESE are few houses that were built before sun parlors and sleeping porches came into demand that cannot be remodeled so as to have these modern features. The cost of the additional rooms is more than gained by the satisfaction they give the owner and the increase in the value of the house, should it be sold.

How builders can add a sun parlor with a sleeping porch above it are shown in the drawings accompanying this article. This is, however, only one method of this kind of remodeling, but it will suggest to the experienced builder a basis on which he can give the house owner the sort of addition he wants, or one that will conform to the architecture of the house to be improved.

### Sun Parlor Should Conform to Architecture of House

In designing a sun parlor, or a sun parlor and sleeping porch, the contractor will first consider the type of architecture of the house and place the addition where it will most improve the dwelling. The addition here shown was placed at the side of the house, at the front. This is constructed of face brick, set on a concrete foundation, with a stucco strip below the sleeping porch windows. Details of the construction are given in the section, while what a fine addition to the house the sun parlor makes is shown by the elevation.

The floor plan of the sun parlor, or living porch, calls for a tile floor, but any material suitable or wanted by the owner can be substituted. The accordion folding glazed doors leading from the living room to the



Showing How a Sun Parlor and Sleeping Porch Can Be Added to Many Homes.

porch also can be changed into any other desirable type, or left out altogether.

In this design the roof line was extended out over the porch to conform to that of the rest of the building. That is a feature that should not be overlooked—to so design and build the addition that it will not appear as an addition, but apparently will be a part of the original construction.

### Dining Porch with Sleeping Porch Above

As has been said, this design is susceptible to many alterations. For instance, the living porch here shown can be transformed into an outdoor dining porch, adjoining the dining room, with a sleeping porch above. When such an addition is made, the construction will be more simple, as dining porches usually were merely screened in, being placed in a position where there is more privacy.



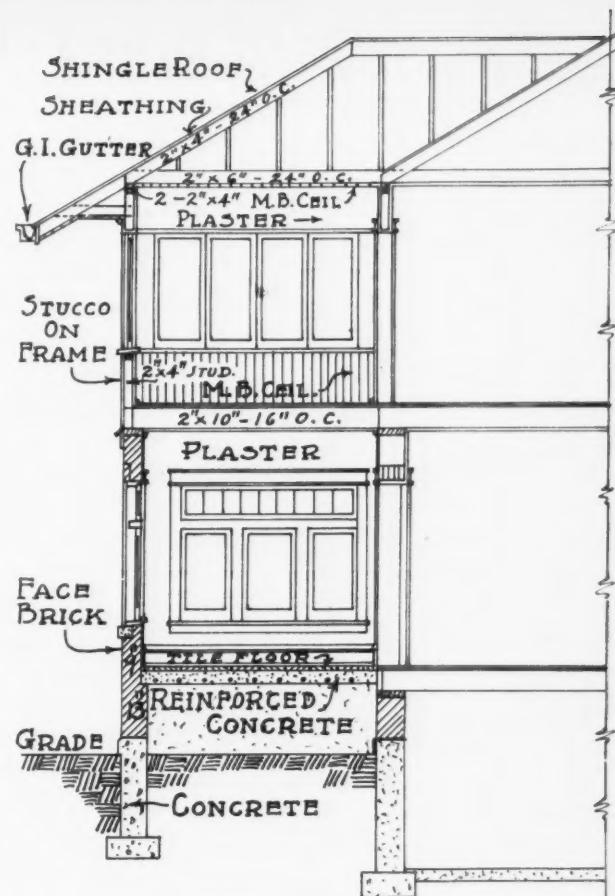
A Sleeping Porch Adds Greatly to the Comfort of a Modern Home.

Remodeling jobs to bring houses up to date are profitable jobs for contractors. There are many of them right at hand, if they are suggested to owners. Houses without the modern features, such as here shown, do not command near as much rent as those that have the improvements. Neither are they so readily saleable. Both of these arguments carry weight with the house owner and will go far toward reconciling him to the cost of a sun parlor and sleeping porch.

What the addition of a sleeping porch means to the health and comfort of the occupants of the home is shown by the illustration taken from a photograph of the interior of a modern sleeping porch. This porch is large enough, as is the one in the design, to accommodate two beds. The casement windows shown can be arranged so as to admit as much or as little air as is wanted, and are operated so easily that they can be quickly closed in case of a storm.

In the thousands of homes to be erected this year sun parlors and sleeping porches will be features that practically every builder will want. At the same time the owners of old houses will be prospects for such remodeling jobs. This is profitable work—the kind the progressive contractors are going after.

There is an additional feature about sun parlor and sleeping porch building that should appeal to every progressive and ambitious builder. That is the satisfaction these features give to the home owner. That is one of the greatest business builders for those en-



SECTION OF  
NEW LIVING PORCH

**The Way to Build a Sun Parlor and Sleeping Porch.**

gaged in the building business. The more satisfied clients they have the more rapidly will their business grow. And the erection of these additions to homes already built gives just that satisfaction that comes from the owner being comfortable at his home in the summer.

These jobs are not hard to get. The builder has so many examples of these comfort-bringing features to show his prospective clients that, on the other hand, they are comparatively easy to get. While this sort of building does not involve so much money as erecting a home, they are profitable and worth while.



**Framing the Roof of a Round Corner**

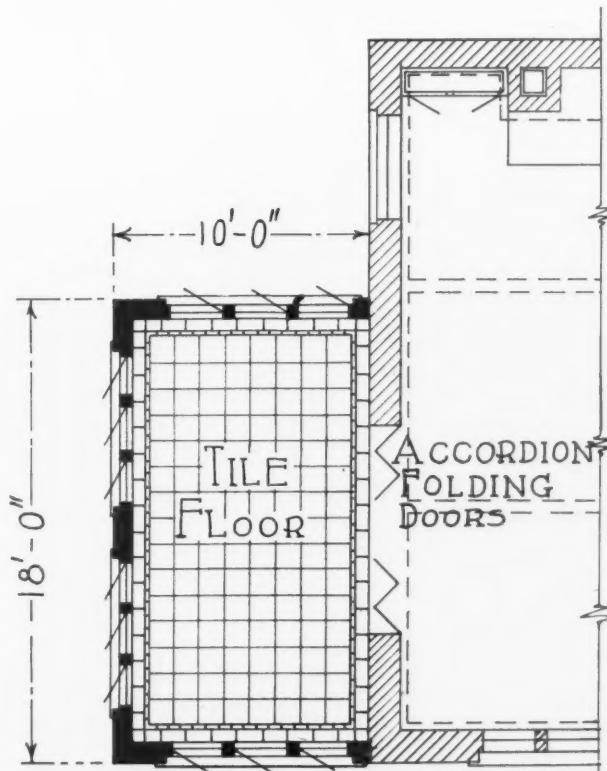
To the Editor:

La Fargeville, N. Y.

In the March issue Mr. Homola asks about framing the roof for a porch to go round the corner of a house, but does not give much data for one to work on. If the roof is to match the one already there, this would determine the pitch of the rafters.

A plan of the work would show that the curved part is one quarter of a circle, so it will be framed the same as tho it were this part of a roof on a round building. The rafters all meeting at one point—the corner of the house—tho the middle one could be put up first and the others cut to go between this and the last common ones on each side, where the curve begins.

JOHN UPTON.



Floor Plan of Sun Parlor and Sleeping Porch. Note the Abundance of Windows and the Folding Doors That Separate the Porch from the Living Room.

## Portfolio of Blue Printed Beautiful Homes

EXTRAORDINARY ILLUSTRATIONS SHOWING INSPIRATIONAL HOME DESIGNS ARE FOUND IN FOUR PAGES FOLLOWING—NEW "AMERICAN BUILDER" FEATURE IS ACCLAIMED GREAT SUCCESS

OUR confidence that the AMERICAN BUILDER family would find the Portfolio of Blue Printed Beautiful Homes inspirational and a great help in this era of home-building has proved well founded. The inauguration of this extraordinary feature in the May issue has brought many expressions of approval from the readers of the World's Greatest Building Paper, who have found the illustrations helpful in promoting home-building.

This month we present another excellent selection of building designs in the four succeeding pages. Here are shown a Hip-Roof Shingled House, an Artistic Five-Room Bungalow, a Four-Room White Bungalow and an Attractive Two-Flat Building of brick and terra cotta—four designs that will appeal to the home builders in both city and country.

### Great'Aids to Home Building Campaign

The AMERICAN BUILDER puts forth these designs lithographed in two colors by this new and expensive process to aid home-building. There is nothing that so inspires the prospective builder to action as a beautifully printed perspective of a modern, but not expensive, home, with a floor plan that embodies the features in room arrangement and conveniences that go to make a house what the present-day family wants. Contractors and material dealers will find these illustrations valuable in discussing plans with their prospective clients. They are offered as suggestions, and are, of course, subject to change as desired.

### Homes That the Average Families Want

The Hip-Roof Shingled House, shown on page 1 of the Portfolio, is just the type of home that the average family wants, either in the city or country. The house is rectangular in shape, 36 by 26 feet, and contains seven rooms, a good-sized living porch and a breakfast porch. On the first floor are the living room, dining room and kitchen, and on the second floor are four bedrooms and bath.

On page 2 there is shown a design for an artistic five-room bungalow. The dimensions of this attractive little home are 26 by 48 feet, with a porch projection of 8 feet. The exterior is excellent, the gable roof giving it height and a large attic space. There is the living room, dining room, kitchen and two bedrooms and bath, all of good size, on the one floor and arranged so that the work of caring for them may be done easily. This design and the one on page 3 will

appeal to the small family that wants this style of architecture.

The four-room white bungalow on page 3 is what might be termed a "gem." The dimensions are 30 feet 6 inches by 38 feet 6 inches. A notable feature of the exterior is the terrace, with an artistic curved roof over the central entrance. The hip roof gives it size. This small house is suitable for the city or country.

### Two-flat Building for the City Man

On page 4 of the Portfolio is an exceptionally good design of a two-flat building, of the new type now built by the city dweller, who wants to use his lot both for a home and for a building that will produce an income sufficient to take care of such fixed charges as taxes, insurance and repairs, with something left over to meet the coal bills. The exterior of the building

of brick with terra cotta trim makes it attractive, while the interior is well arranged for comfort and convenience. The entrance, placed at the side, and the sun parlor projection add to its attractiveness. The lot required for this building is 28 by 51 feet. The floor plans show five rooms, living room, dining room, kitchen and two bedrooms and bath, while there is the added space of the sun parlor.

These four designs give the prospective home-builder a good range to choose from. None of them requires a very great investment, yet each one will provide the builder with an attractive, well-

arranged, comfortable home. Before starting to build it is a satisfaction to know exactly how the completed building will appear.

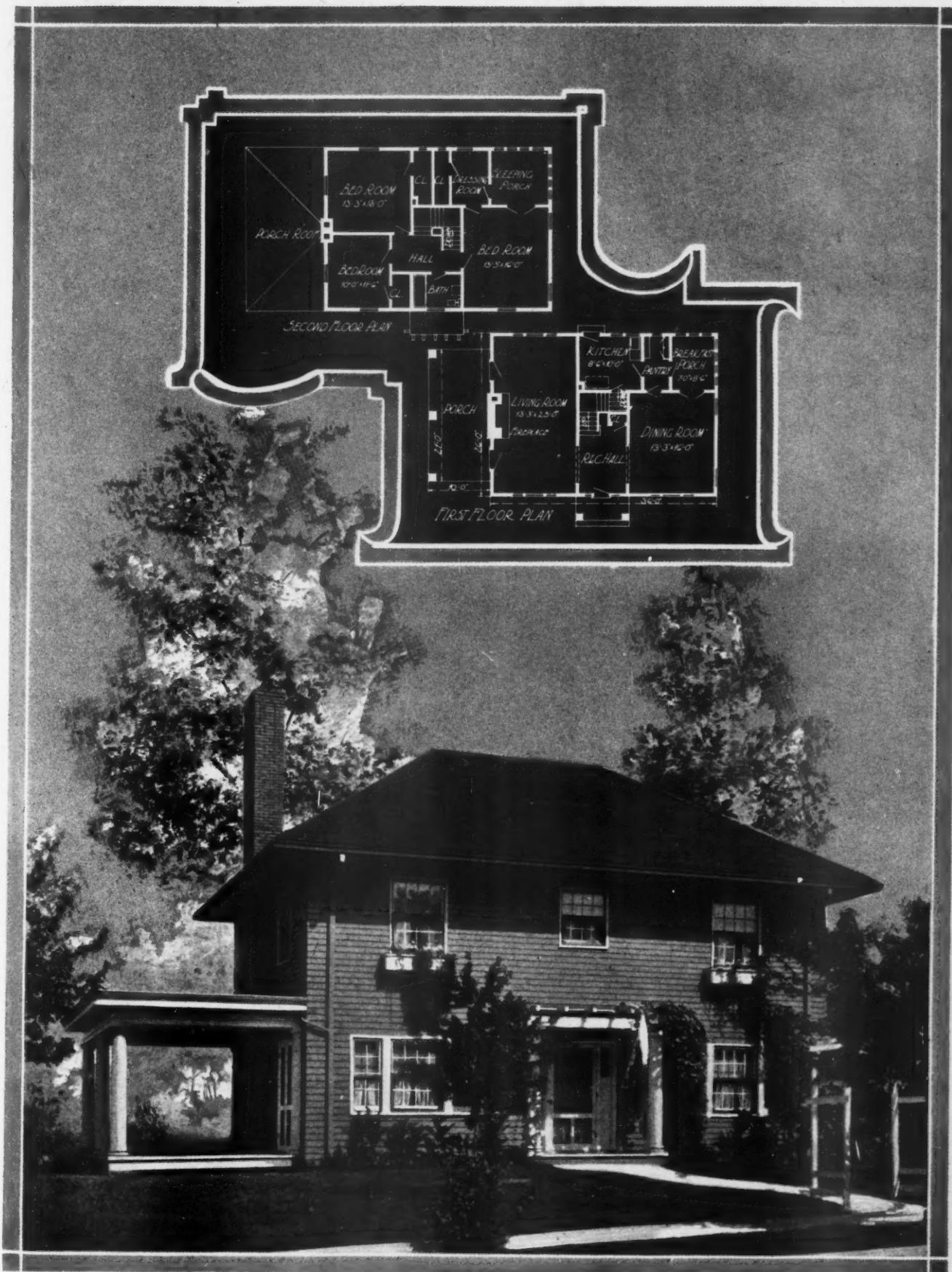
### American Builder Family Are Home Builders

The AMERICAN BUILDER readers are the home-builders, the men who are supplying the people of the nation with the homes they need. It is to give these readers up-to-date ideas on home-building that the expense of this new method of two-color planogravure lithography is being incurred.

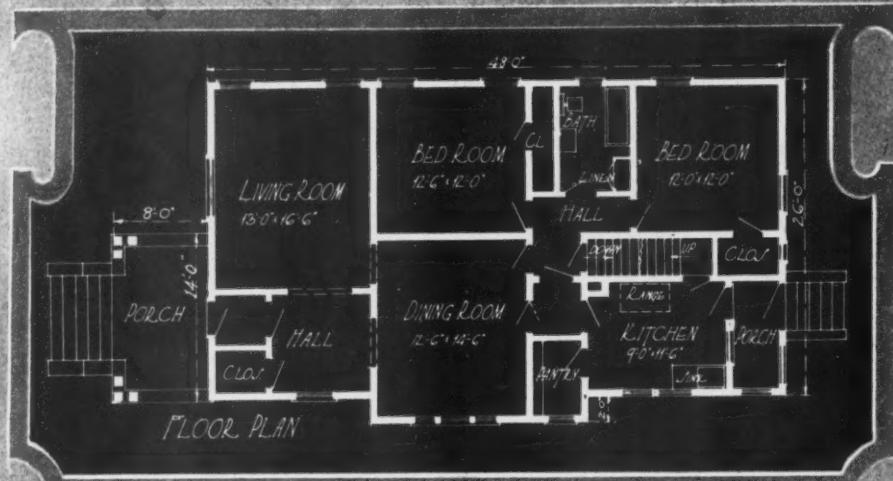
These designs are made by experienced licensed architects—men who have planned many homes and know how to give home-builders the best for their money.

When the contractor, or material man, submits these plans to his clients he is assured that he is giving them ideas about home-building that are good and that will win for him a satisfied customer and a friend. Architects interested in home planning find here the practical suggestions for popular home designs such as the people want.

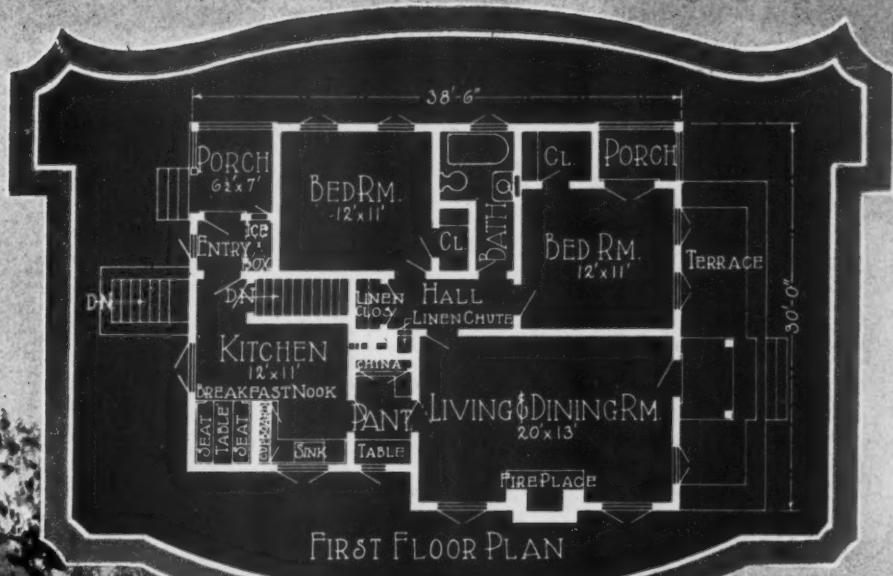
WHAT THEY SAY  
Kansas City, Mo., May 16, 1919.  
In regard to the two-color lithographed section in the May AMERICAN BUILDER, this section is particularly attractive. The idea of showing the plans in blue print form is a very good one. We wish to compliment you on your progressiveness.  
THE LONG-BELL LUMBER CO.,  
By Paul E. Kendall, Adv. Mgr.  
  
Greenfield, Mass., May 19, 1919.  
We noted with a great deal of interest the two-color home design pages in the May AMERICAN BUILDER. These lithograph illustrations are very effective, and anything that makes a magazine more interesting and valuable to its readers the more valuable it is to the advertiser.  
GOODELL-PRATT CO.,  
By M. C. Overing, Adv. Mgr.



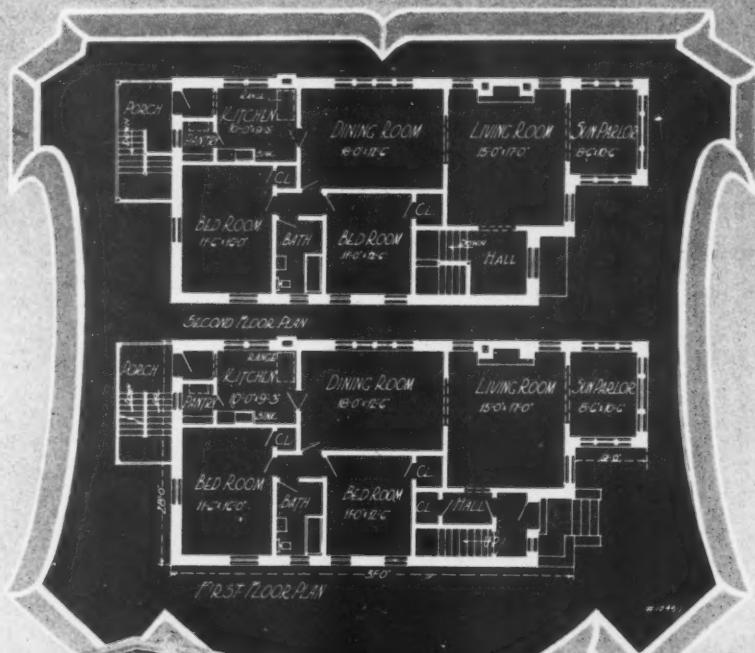
**H**IP-ROOF SHINGLED HOUSE. This is the design that proves equally satisfactory in the city and country. It is a rectangular house of seven rooms, the dimensions being 36 by 26 feet, with a 10-foot porch projection at one end. There is a large living room, good-sized dining room, kitchen and breakfast porch on the first floor, and four bedrooms and bath on the second floor. This is an attractive home for the medium-sized family, and one that is economical to build, two features that are wanted by the home builder.



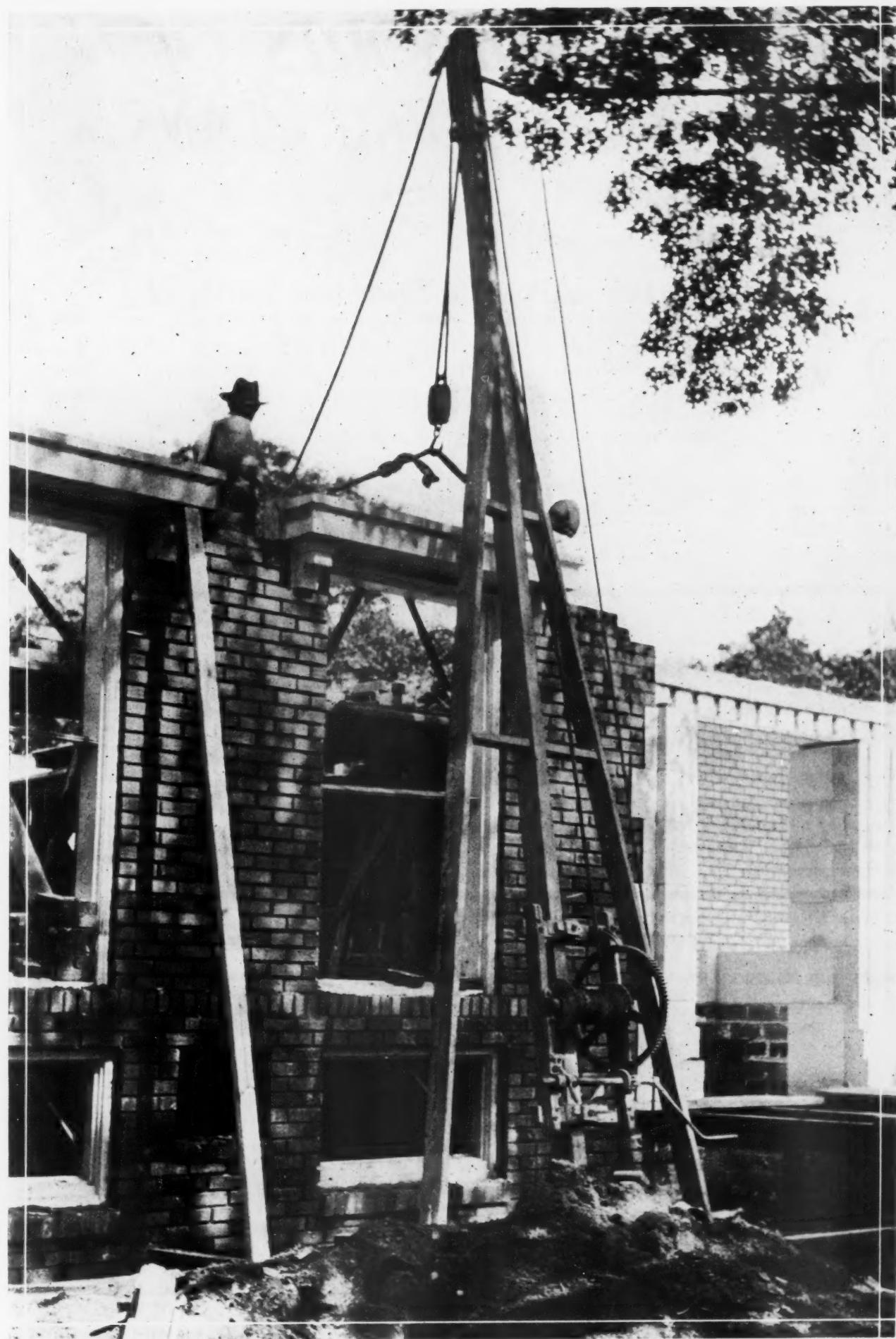
**A**RTISTIC 5-ROOM BUNGALOW. This small modern bungalow has an extraordinary appeal to the home-builder. The attractive porch, the roof gables and the dining-room projection give it an exterior to be proud of, while the interior arrangement is excellent. The size is 26 by 48 feet, with an additional porch projection of eight feet. Note the convenient arrangement of the rooms—how they are located so as to make their care a pleasure.



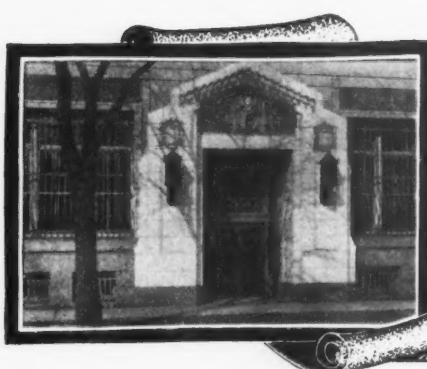
**F**OUR-ROOM WHITE BUNGALOW. White bungalows are in demand. They are exactly suited to the needs of the small family, which wants an attractive and convenient little home. The dimensions of this bungalow are 30 feet, 6 inches, by 38 feet, 6 inches. The terrace at the front and the hip roof, with the arch over the entrance door give this bungalow a fine exterior appearance. There is a large living and dining room, 13 by 20 feet, while a kitchen breakfast nook provides a second dining place. Two bedrooms and bath complete the interior. This is a bungalow that will appeal to home builders this season.



**A**TTRACTIVE TWO-FLAT BUILDING. This is the sort of building that city folks want—a building that not only provides a home for the owner, but is a revenue producer as well. Built of brick with terra cotta trim, it is exceptionally attractive. Each flat has five rooms, bath and a good-sized sun parlor. Both the living and dining rooms are large, and the bedrooms are of good size. The dimensions are 28 by 51 feet, a size that will fit nicely on the average city building lot. The prospective city home builder will like this design.



Here Is a Good Picture of a Good Builder Erecting a Good Building. The Derrick Is Just Putting in Place the Heavy Stone for the Window Cap. This Is a "Classy" Building, the Kind That Contractors Are Proud to Put Up.



# ALL SORTS OF BUILDING PLANS



## Design for a Brick Theater Building

THE STYLISH AND POPULAR LINES OF THIS BUILDING HAVE MADE GOOD AT THE BOX OFFICES

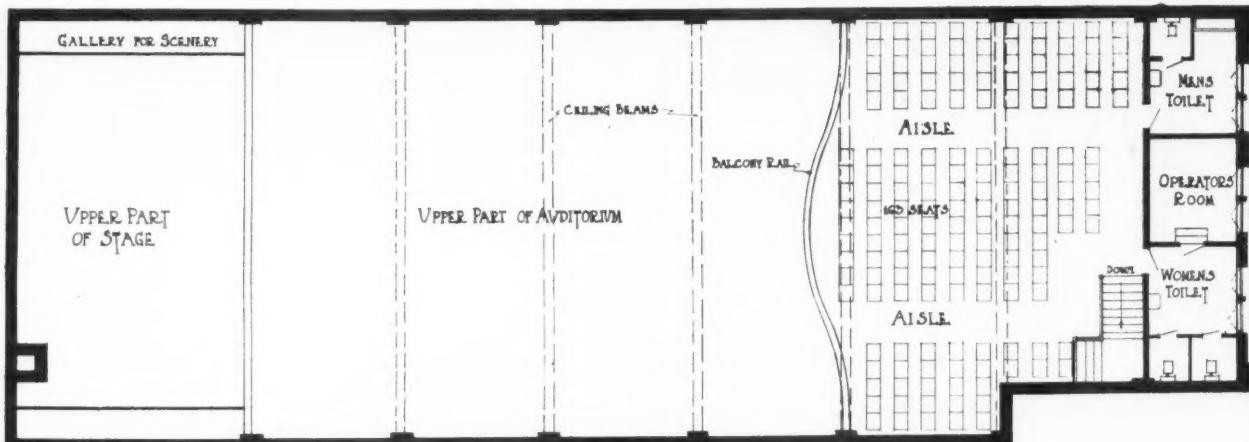
**O**f large public buildings there undoubtedly are more theaters being erected than any other one type. Public building is being urged, but the popularity of the "movies" has created a demand of this kind that will not be denied. And building contractors get the work.

On this and the next page is shown a design for a modern theater building that will seat about 700 people on the main floor and in the balcony. The building is of standard brick construction and fireproof. What

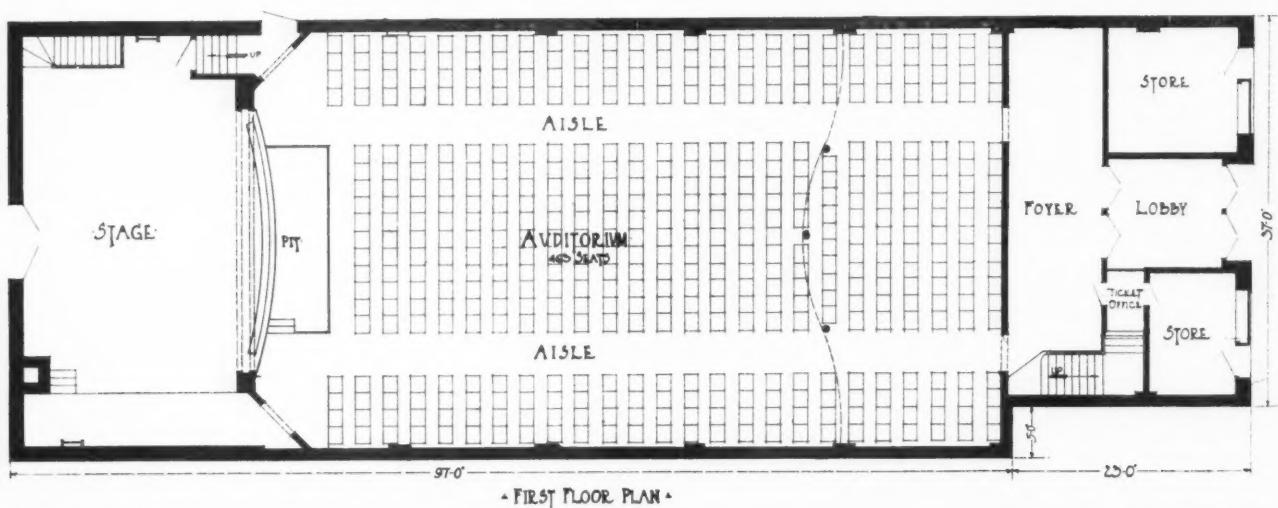
an attractive front is made with face brick is shown in the perspective, while the floor plans and longitudinal section give the builder an idea of its construction.

On either side of the entrance to the theater are placed two small store rooms—the kind that find business profitable adjoining a theater, while they bring a good revenue to the building owner.

This is a design that will be found excellent and will suit the needs of many theater buildings in the growing cities and towns.



The Balcony Seats About 200 People and Contains the Operator's Room and Toilets.



Floor Plans for Brick Theater Building, Front Elevation of Which Is Shown on Following Page. The First Floor and Balcony Seat About 700 People. This Is the Type and Size of Theater That Makes a Good "Movie" House.

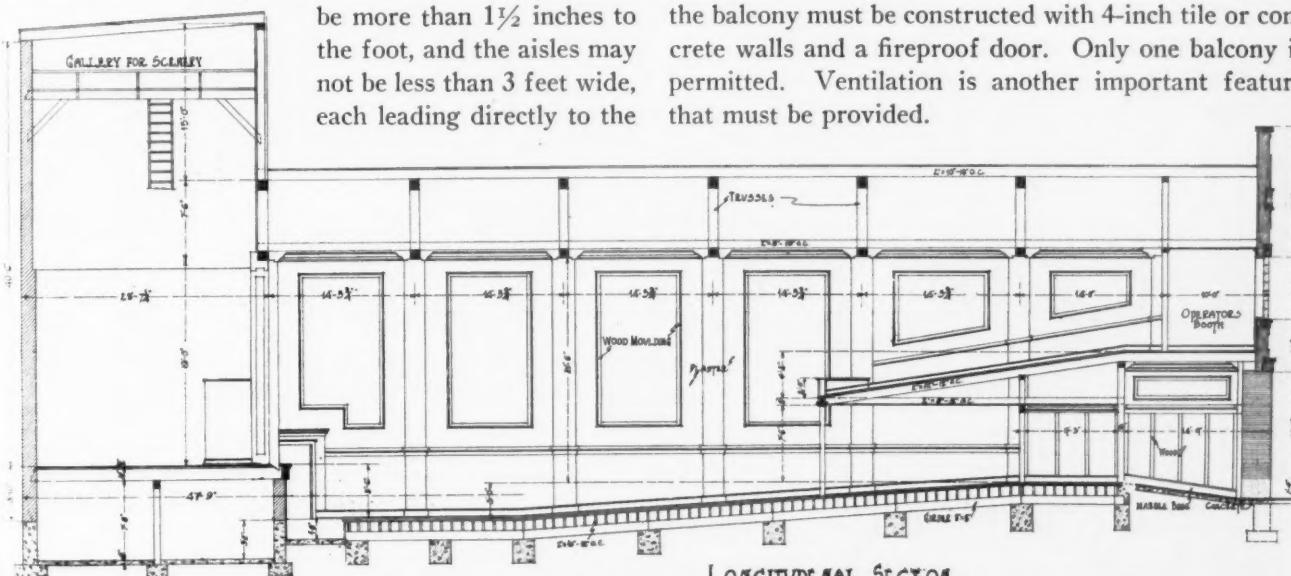


Front Elevation of a Theater Seating About 700 People. It is of Standard Brick Construction and Fireproof. Stores on Either Side of the Entrance Add to the Owner's Income. This Is an Excellent Small Theater Design.

Safety and comfort are two essentials of theater building. Because of a theater disaster a number of years ago, Chicago has exceedingly stringent theater building regulations. In theaters of the size shown in this design, the building must be of brick, tile, concrete or terra cotta. The pitch of the concrete floor cannot

be more than  $1\frac{1}{2}$  inches to the foot, and the aisles may not be less than 3 feet wide, each leading directly to the

four exits required, two at the front of the building and two at the side or sides. There cannot be more than ten seats in a row, and there must be a space of at least 32 inches between the seats, back to back. The proscenium wall at either side of the stage opening must be 9 inches thick. The picture machine booth in the balcony must be constructed with 4-inch tile or concrete walls and a fireproof door. Only one balcony is permitted. Ventilation is another important feature that must be provided.



Longitudinal Section of Brick Theater Building, Showing Concrete Floor Foundation, Balcony Support, Stage Construction and Other Essentials in Theater Building.

## Design for a Public Garage of Good Size

BUILDING IS 50 BY 100 FEET AND HAS CURVED ROOF SUPPORTED BY LATTICE TRUSSES

As automobiles increase in number so do public and private garages. But it is on the public garage that the autoists depend for supplies of all kinds and repairs, while many store their cars in them. For these reasons public garages should be fireproof buildings.

Here is shown a design for a fine public garage and supply salesroom. The dimensions of the building are 50 by 100 feet, which will accommodate a considerable number of cars. This building is of fireproof construction. The building is of standard brick construction with the front of the face brick made exceptionally attractive by terra cotta trim. The floor, of course, is of concrete.

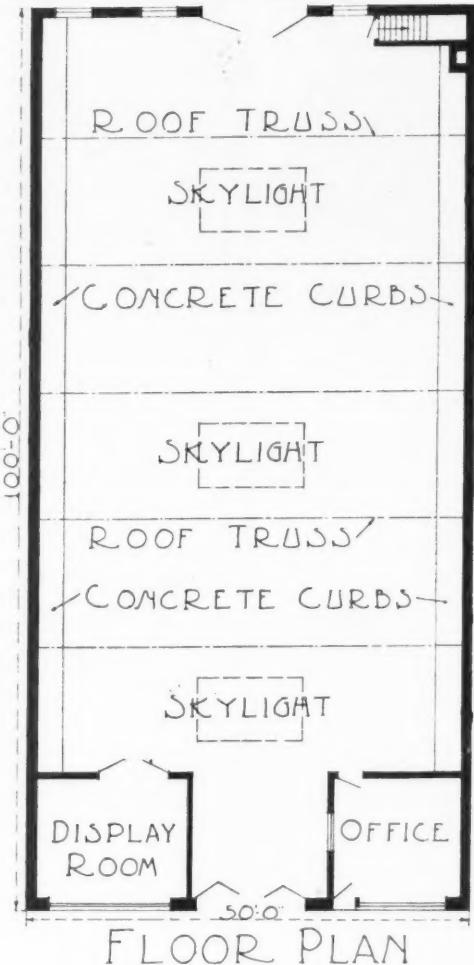
The floor plan accompanying this article shows the interior of the building.

It will be noted that the roof is supported by trusses, leaving the entire area of the building unobstructed by posts, which allows a free movement of the machines. Light is secured thru skylights, of which there are three. The office is at one side of the entrance door and the display room for accessories at the other. Concrete curbs protect the machines from backing into the side walls.

The entrance is closed by four doors of the folding type, which are hung on a trolley track and are hinged together. They have automatic opener. The service door opens into the office.

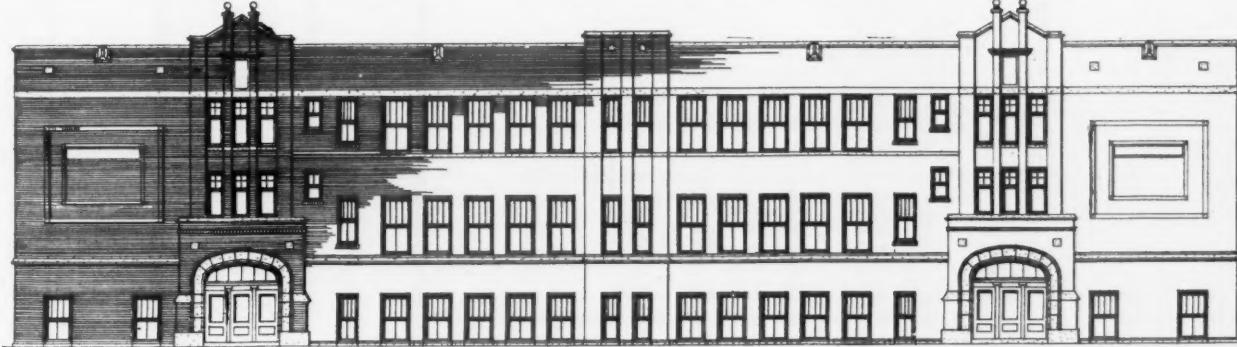
While it is not shown on the floor plan, the rear of the building can easily be partitioned off to provide a work room for the mechanics and a place for their tools. A non-bearing partition of wire glass will be best adapted for this purpose.

This is the type of medium-size garage that will be generally built in both large and small cities. And this design will help contractors and material men in getting these building jobs.

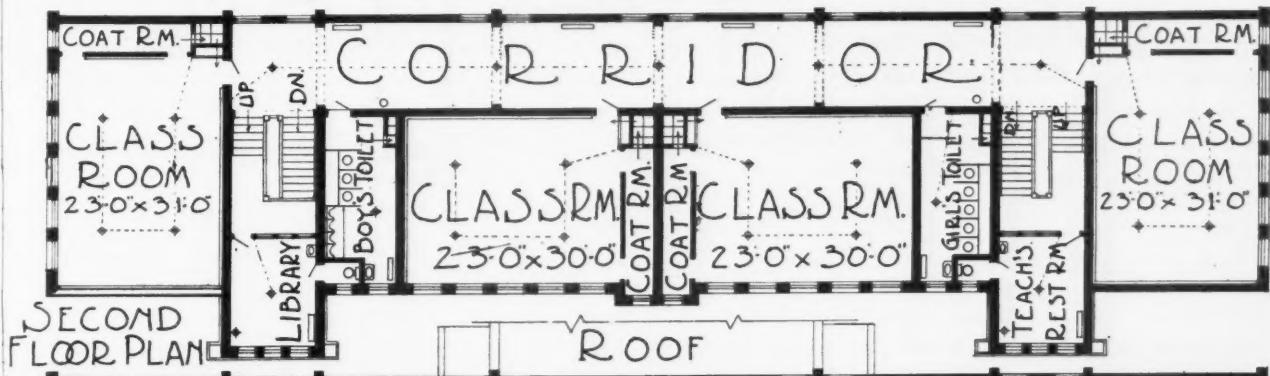


Front Elevation of a Public Garage of Brick and Terra Cotta. The Dimensions Are 50 by 100 Feet, Which Provides Space for a Good Many Autos, While There Is Room for a Supply Salesroom. The Building Is Fireproof Thruout and Is Especially Attractive.

# WOODROW WILSON SCHOOL



## FRONT ELEVATION



MAIN FLOOR PLAN

CORRIDOR

COAT R.M.

CLASS R.M. 23'0" x 31'0"

OFFICE 12'0" x 15'0" UP DN

STAIRS

CLASS R.M. 23'0" x 30'0"

COAT R.M.

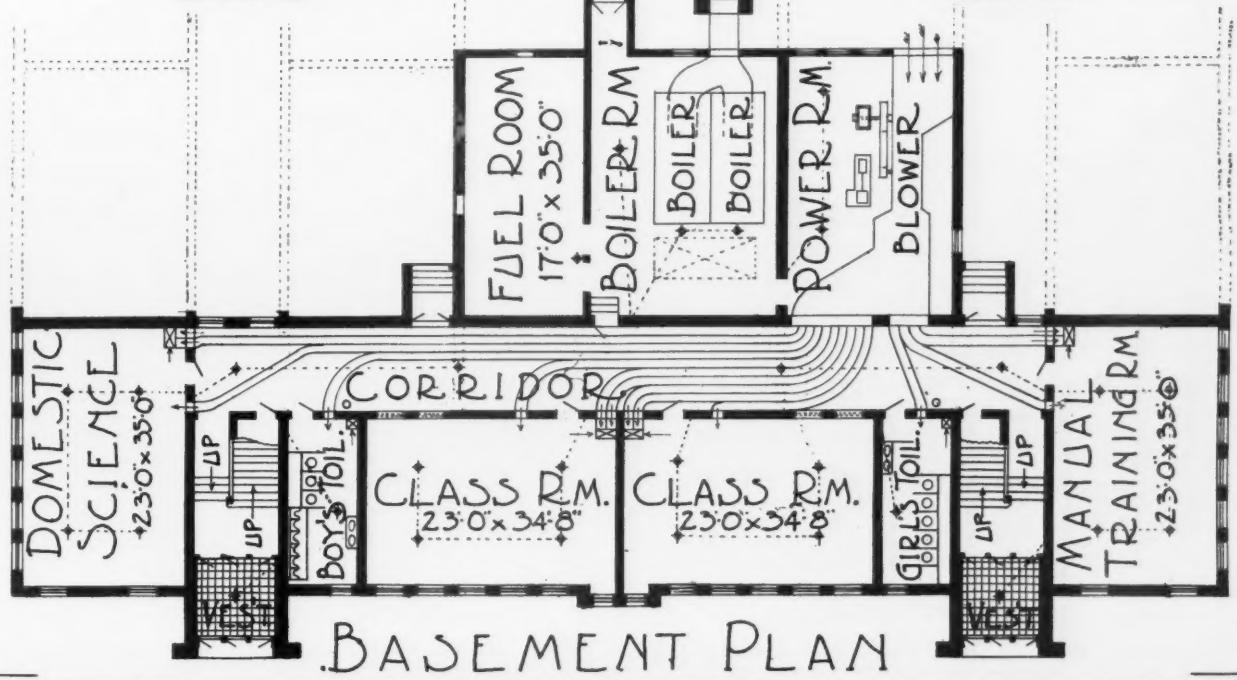
CLASS R.M. 23'0" x 30'0"

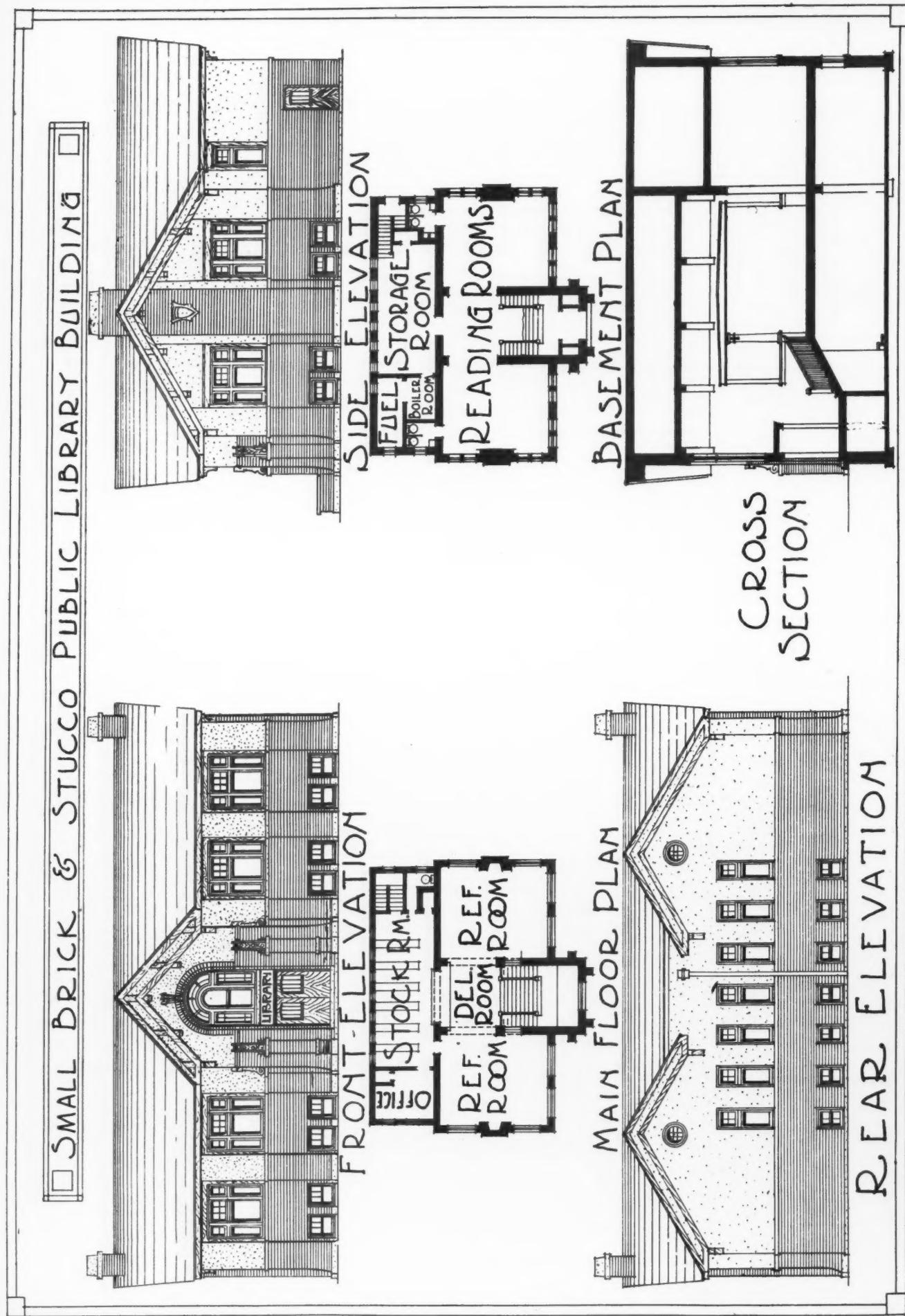
COAT R.M.

OFFICE 12'0" x 15'0" UP DN

TOILET

CLASS R.M. 23'0" x 31'0"





There is now being planned much public building. Here is a design for a small brick and stucco public library building of artistic appearance and planned for efficiency and convenience. G. W. Ashby, Chicago, Architect.

## Design for a Beautiful Village Church

HERE is shown a design of the type of building that many rural contractors will be called on to build this year. The government is urging public buildings of all kinds, and hundreds of churches will be erected.

This beautiful rural church building design is just the right size for the small country congregations. It will seat 354 people, which is a good-sized congregation. The exterior is attractive, the combination hip and gable roof being a novel roof treatment.

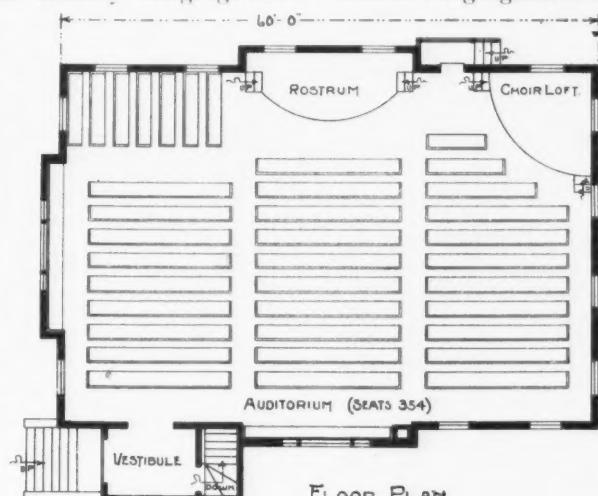
The floor plan shows the placing of the rostrum and the choir loft and of the pews. There is a vestibule ample for the needs of the church. The dimensions of the building are 60 by 40 feet.

This design is an excel-

lent one for a congregation that does not want an expensive church building, but will build a comfortable and attractive building.

Building churches of this size and design is profitable work for the rural contractor and builder. The desire to have a home of their own is as strong in church congregations as it is in individuals. And congregations also want artistic and comfortable places in which to worship. This design is excellent, embodying, as it does, the attractive and utilitarian.

When there is an opportunity for a job of erecting a small church in a village or more rural community this design will help the contractor get the job. The perspective will appeal to the church committees, as will the floor plan.



A Beautiful Village Church to Seat 354. Well Arranged Inside and Exterior Appearance Satisfactory. This Type of Public Building Is in Demand This Year.

## Make Every Nook in the New Home Useful

CASES BUILT INTO THE CLOSETS GIVE THE HOUSEKEEPER STORAGE ROOM AND SAVE SPACE IN THE HOUSE

**I**N the many thousands of homes to be erected this year every effort will be made to conserve space.

All the nooks and corners will be utilized to give the owner the greatest satisfaction for his money. This is necessary because of the cost of building, but by using his ingenuity the contractor can give his client almost as much for the same amount of money as he could several years ago, when materials were cheap and a few feet more or less did not count so greatly as it does now.

In the homes this year very little space will be devoted to storage room. The home owner will look upon a storage room as a waste—not worth its cost. But by making each closet so that the greatest amount of clothing and other articles can be stored in it, there will be plenty of storage space. Every housekeeper knows how much of the room in the old-fashioned plain closet is not used; or, if it is used, is merely the dumping ground for odds and ends. By providing a place to store various articles, this waste will be eliminated.

### Three Suggestions for Closet Cases

Accompanying this article are three suggestions for cases the contractor can build into the closets. In these cases can be stored in the most satisfactory way all of the wearing apparel, the household utensils

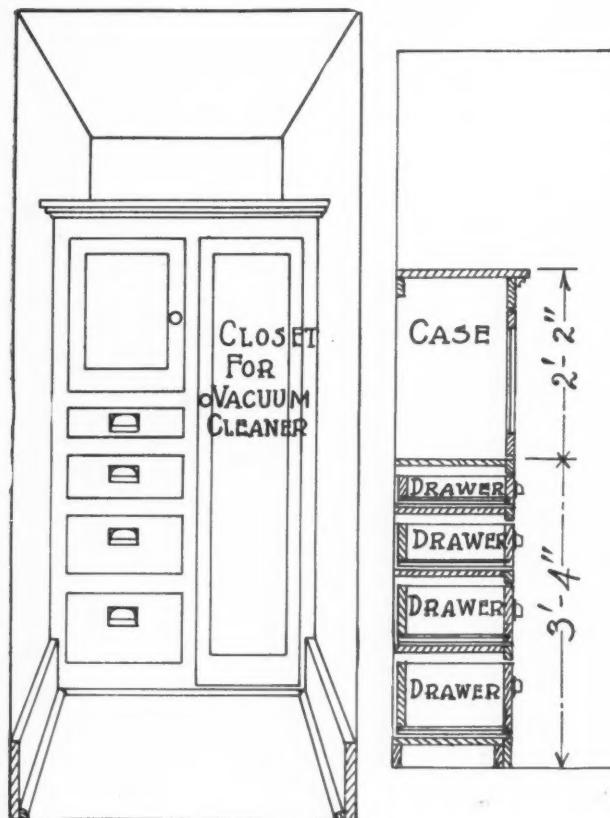


Fig. 1. Here Is a Dining Room or Kitchen Closet That the House-keeper Will Appreciate.

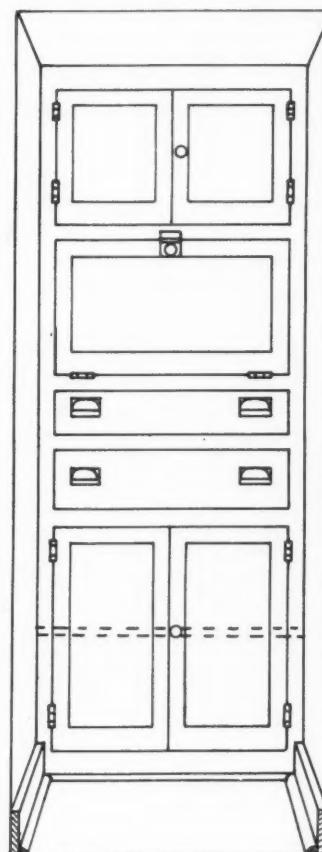
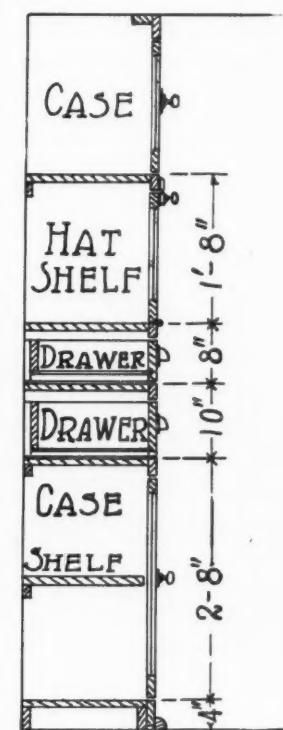


Fig. 2. A Place for Shoes, Hats and Other Wearing Apparel.



and the linens, towels, blankets and extra bedding.

Figure No. 1 is a suggestion for a closet off the dining room, or the kitchen. At the bottom, extending upward three feet, four inches are four drawers of varying sizes. At the top is a case, two feet, two inches high. At the right hand side of this case is a case five feet, six inches high in which can be stored the vacuum cleaner, the dust mop and the broom. Every housekeeper will at once realize how handy this closet case will be. Here is storage space for the linens and the utensils that are in every-day use. And the space it occupies at the back of the closet will be orderly.

Figure No. 2 is a design for a bedroom closet. There are three cases, one at the bottom and two at the top with two drawers in between. The bottom case is for shoes. It will accommodate a number of pairs, being divided in the center with a shelf. The drawers will hold a variety of light garments. The lower of the two top cases is designed for hats, while the top case can be used to store heavy bed clothing, such as comforters and blankets.

Figure No. 3 shows how the clothes closet may be fitted so as to provide more storage room. Here are four drawers of various depths, on top of which

boxes may be piled. The shelf above is a handy storage place, while along the walls are hooks for hanging the clothes that are in daily use.

### No Special Hardware or Lumber Required

All of these cases are easily constructed and may be built at the shop and installed when the house is about completed. They require only such hardware as is not expensive, the balance of the cases being made of lumber of standard dimensions.

It is just such small details as this that appeal to the women when they are studying home designs.

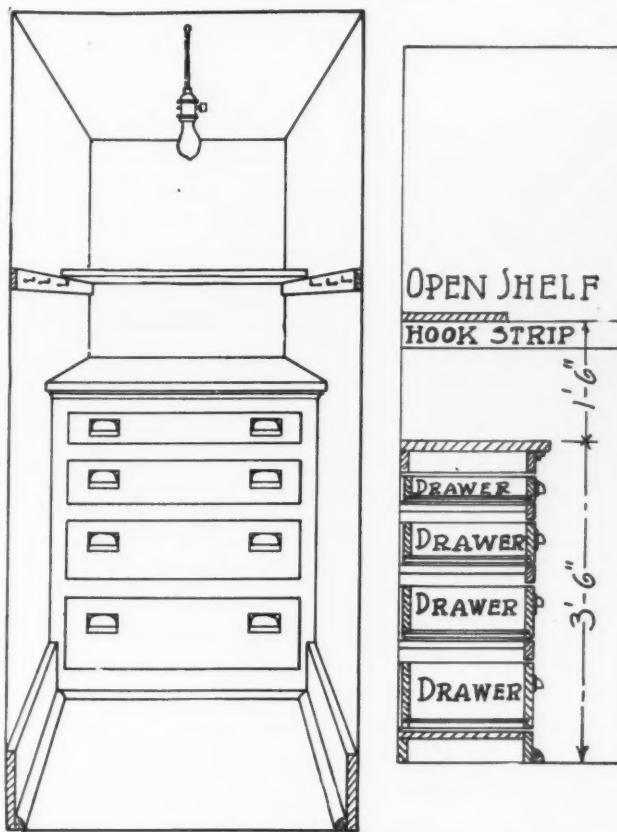


Fig. 3. There Is No Waste Space in the Bedroom Closet That Contains a Case Like This.

The exterior and the room arrangement and the sizes of the rooms will be carefully scanned by the men, but to the housekeeper the conveniences to make her work easy and satisfactory will be what counts.



### Renovating the Refrigerator

A good many people who thoroly believe in the sanitary qualities of paint never think of giving the interior of their refrigerators a coat, notwithstanding paint dealers sell an enamel especially intended for refrigerators. One of the features of this special enamel is that it will not contaminate the food. This is by no means true of all enamels.

It is difficult to think of anything which it is more important to keep thoroly clean and sanitary than a refrigerator. Ptomaine poisoning and other serious diseases may result from neglect to do this.

Of course, this advice to paint applies particularly to refrigerators having galvanized iron linings; those having porcelain or enameled linings require only frequent washing with soap and water to keep them clean and sanitary.

### Building A Rustic Bridge

THE builder who lives in rural sections or who depends upon country trade for his support need not confine himself to building houses, barns, chicken houses and silos. He can, now and then, suggest a little building in the way of adding beauty to a place, which will render rich returns.

An Iowa farmer had occasion to pass from one portion of his farm to another almost daily. He had to cross a small ravine, which was neither large nor dangerous, but it was some effort to walk up the sharp hill.

An enterprising builder came along and suggested that he build a small foot bridge on a level with the two sides of the ravine.



Good Design of a Rustic Bridge.

"Can't do it now," said the owner of the land, "it will cost too much. Lumber is too high."

But the builder had another idea. He suggested taking the small saplings growing in the timber and use them in the construction. He pointed out how easy it would be to make a serviceable bridge with the material at hand.

As a result, he received the order and built the bridge shown herewith. It has been a great foot-saver to the farmer and has added a tinge of rustic beauty to that particular farm.



### "Let's Go"

THE National Prosperity Campaign has adopted the slogan "Let's Go" and is spreading its meaning broadcast.

Let's go means just what it says.

Let's go and start prosperity.

Let's go and get busy.

Let's go and do business irrespective of what the other fellow is doing.

Let's go while the going is good and not wait until the train of prosperity is under way and we have to run our fool legs off to catch up with the procession.

Let's go and be real, live, enterprising, hustling American men of business.

Let's go and let's keep going!

## Good Homes and How to Paint Them

By Coleman Bentley

**G**OOD homes, beautiful homes, how shall we define them? One might as well try to describe beauty in Nature in a single phrase, as to endeavor to arbitrarily define beauty in architecture. No single factor renders a building beautiful. Size and proportion, style and decoration, setting and color of painting, all must be given careful consideration. Any of these factors can make or mar the beauty of the building.

The average home-builder seldom builds more than one home, and it makes little difference whether it be a palatial residence with great expanse of green lawn and great clumps of shrubbery, or a bungalow with its modest grass plot and old-fashioned garden of four-o'clocks, snap-dragon and hollyhocks—it is home. Into that home he puts his very best thought in design and plan; pays particular attention to the quality of the lumber and hardware; selects the very best heating and lighting systems that he can afford—because it is to be *his home*.

The selection of colors with which the house is to be painted should call for equal care. One may build a home that is perfect in every architectural detail and yet detract from its beauty by using an improper combination of colors for that particular style of house, or by using one that does not harmonize with the surroundings.

Homes of the California bungalow type, sitting low in the ground, should generally be painted in light colors for the masses, with strong, sharp accents of color on the smaller parts, such as the windows and door sashes, the frames and some of the smaller mouldings. If the porch is not paved with red brick, the floor should be painted in dark red.

The New England Colonial house, with its free treatment of the classic orders, looks at its best in white or light buff tones,

without any strong accent, with the possible exception of the shutters or blinds, which are often painted with very pleasing effect in a dark green or a blue green color.

Familiar to all who travel thru our beautiful suburbs is the Suburban Cottage style of home which followed the unattractive Mansard roof period of American architecture. It was suggested originally to our native architects by the designs of such Englishmen as Norman Shaw, Goodwin and other illustrious men who followed Ruskin in the Gothic revival. This type of house lends itself to a wide range of colors. Brown russets and gray greens fit this style well and blend harmoniously with almost any surroundings.

The Dutch Colonial house, with its homey, comfortable, Gambrel roof was adopted by the Dutch settlers of Long Island and is extremely attractive to a great number of people. It lends itself to the many special features that make a home particularly cozy. The two great stone chimneys suggesting the big open fireplaces inside the door, with the side lights, are characteristics that carry with them an atmosphere of warm welcome. The color treatment of this house permits of considerable latitude. The vertical wall surfaces should, however, be light, and the details in white or very light tones to show the fine mouldings; the shutters should be in brown or green.

The English half-timbered house is an American adaptation of a style of house built in certain districts of England during Elizabethan times. Its distinctive characteristics are indicated by its name, light tone plaster panels alternating with dark timbering. Strong contrasts in colors may be selected for this house. Dark green or brown for the timbers and bargeboards, using stain rather than paint in order to retain the natural grain of the lumber, altho paint can be used



Each Type of House Needs Special Paint Treatment to Make It Look Its Best.

with just as much satisfaction, and russet tone for the roof shingles, with strong color accents for the sash and other small parts, combine to produce most pleasing effects.

The use of concrete or hollow tile with concrete or stucco facing is increasing as a building material for "good homes." The emphasis given to the long horizontal lines, the low-hipped roof, and the grouped windows, with the broad contrasting wall surfaces, all proclaim Italian precedence in the design. The proper treatment of the walls and surfaces of this type of house is very important. They should be light in color, and the surface texture should be carefully considered.

The roof, usually of tile or slate in red or brown color, and the walls should form two contrasting color masses. The walls can be painted in buff, with dark green for the window and door frames. Buff of the same tone as the walls can be used to very good advantage on the window sashes.

With the exception of the typical city brick, or stone houses, these six styles of houses cover the general run of good homes of modern American architecture. While the exact details of the house the reader may have in mind, or now lives in, may not be shown in the six illustrations herein described, he can readily utilize the suggestions given for the style of house most nearly like his own.

## How the Contractor Can Help Finance Home Building

PLAN EVOLVED IN PORTLAND, ORE., TO HELP "BUILD YOUR HOME" CAMPAIGN IS APPLICABLE IN EVERY COMMUNITY

ONE of the difficulties that those who want to build a home this year are encountering is that of securing the money to build. Because of the limitations placed on the building and loan associations and of conventional banking practices in making such loans, there has been devised a plan whereby the contractor can help his client, and, at the same time, does not have to tie up any of his capital in the buildings he erects.

The tentative plans for financing construction of houses for shipworkers in Portland, Ore., suggest a line of action adaptable to almost any community. In submitting to the Department of Labor the plans for proposed Portland Housing Corporation, Paul C. Murphy, prominent in the Own-Your-Own-Home movement, says:

### Helping the Owners of Building Lots

"We find in Portland that there are many persons who own their lot but cannot borrow sufficient money to build a home, as most of the loan companies will not lend over 50 per cent of the value of the property. This plan is intended to provide for the difference between the amount that can be borrowed on a first mortgage and the amount necessary to complete the home. The monthly payments—which one would have to pay out for rent—would first apply to the second mortgage which, in most cases, would be paid off by the time the first mortgage became due, which could be renewed or put upon a monthly installment loan, like the building and loan association."

The proposed Portland Housing Corporation would have a paid-up capital of \$10,000; it would prepare plans for houses to cost approximately \$2,000 designating the materials required and obtaining written assurance from material men to furnish the complete bill of material on order at specified prices.

The Corporation would then invite applications from

workers for assistance in building houses. These applications should show (1) bona fide employee for the three months preceding the application, (2) ownership of lot containing at least 5,000 square feet in a district acceptable to the Corporation, (3) cash in hand amounting to \$300 at least, (4) that the applicant is willing to enter into a contract with contractor approved by the Corporation for the building of a house on plans likewise approved by the Corporation.

### The Part the Contractor Plays

If application is approved by the Housing Corporation a contract is made between the applicant and a contractor for construction of a house at an approved price which, for illustration, is assumed to be \$2,000. The contract will provide for a payment of \$300 in cash, the execution to the contractor by applicant of his note and a first mortgage for \$1,000, also the execution in favor of the contractor by applicant of his note and a second mortgage for \$700. The first mortgage will draw interest at the rate of 7 per cent and the second mortgage at the rate of 5 per cent. Interest rates in Portland are somewhat higher than in the east. The first mortgage will be payable in five years and the second mortgage at the rate of \$15 per month. Interest will be adjusted on both mortgages according to progress and completion of construction. As further security to the second mortgage holder the fee of property shall rest in a Trust Company as trustee until the second mortgage is paid. On the signing of the contract the Housing Corporation will procure a firm offer, from responsible persons to purchase such first mortgage at par when the house is completed and a similar offer for the purchase of the second mortgage. Consideration should be given to the alternative of placing these mortgages separately with individuals, or placing them with a corporation organized for the purpose.

## How to Build with Stucco Over Wire Lath or Expanded Metal

HOUSES, GARAGES AND OTHER BUILDINGS OF THESE MATERIALS ARE IN DEMAND

**S**TUCCO houses and stucco buildings are becoming more and more popular. Not only does this type of building have a fine appearance, but when the stucco is applied over expanded metal or metal lath it is fire-resistant, a feature that is being emphasized by the building department of every city as a means of preventing the many millions of dollars in loss thru fire that occurs annually in the United States.

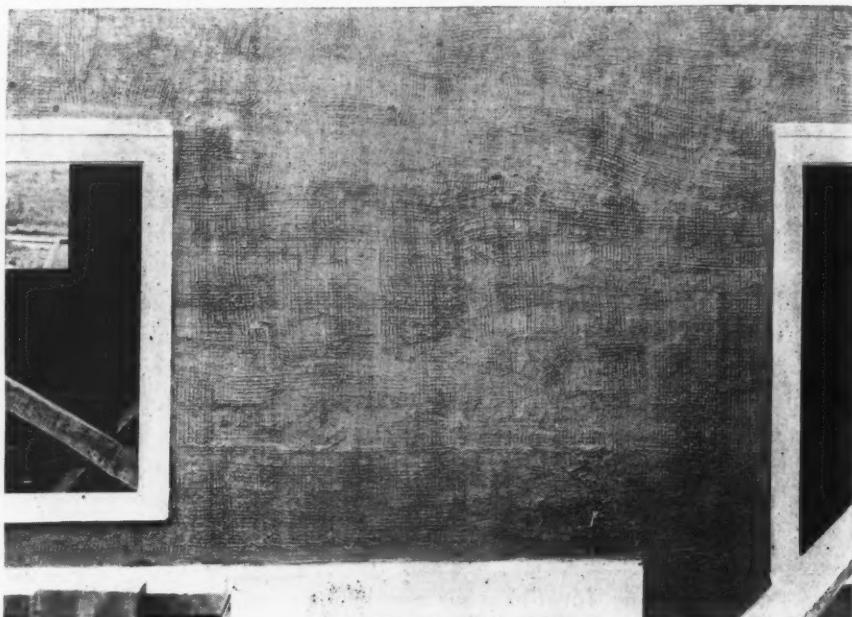
The demand for stucco homes and stucco garages to go with them will be great in this year of home building. And stucco construction being a comparatively new type of building, every builder should become familiar with the methods employed, so that he can give his customers the buildings that they demand.

### Building with Stucco Not Difficult

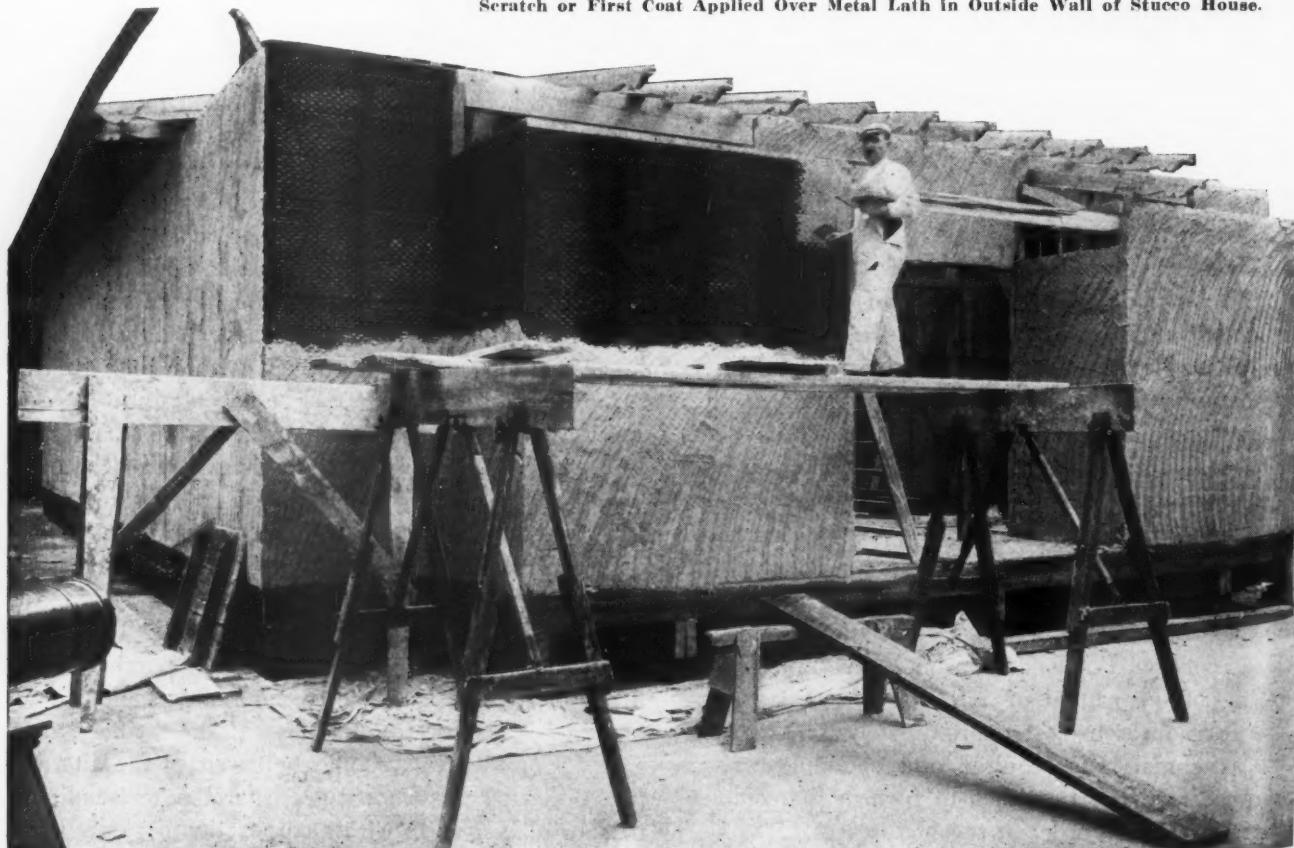
Building with stucco is comparatively simple. The manufacturers of metal lath and expanded metal have studied the subject carefully and their engineering departments are now able to give the contractor much sound advice on this subject. While this article will deal with the

subject in a semi-technical way, lack of space prevents going into the subject as thoroly as it deserves. But in succeeding issues of the AMERICAN BUILDER there will be other articles that will be of great value to the contractor and builder.

In the usual type of metal lath construction—that is, in homes and garages and other buildings of the same character—there is one fact that should be



Scratch or First Coat Applied Over Metal Lath in Outside Wall of Stucco House.



Plastering Over Metal Lath on Outside Wall. This Building Was Erected as a Temporary Structure in Philadelphia Eight Years Ago and Was so Satisfactory and Is Now in Such Excellent Condition That It Is Still in Use.

borne in mind. That is, that good materials and good workmanship are required to make a satisfactory job.

## Method of Framing

The wood studding for the exterior walls should be spaced 12 to 16 inches on centers and should be continuous from foundation to rafters. These studs should be tied just below the floor and ceiling with 1 by 6-inch boards let into the studs on the inner side so as to be flush with the inner face and securely nailed to them. These boards will act as sills for the joists and should be securely spiked to the studding. The studding should be well bridged with one line of bridging between the two floors.

The outer face of the studs and an inch back on the sides should be painted with creosote or asphalt paint to prevent absorption of moisture from the stucco. All downspout hangers and all other fixed supports and fasteners are put on before the plastering is applied. Wall copings, balustrade rails, chimney caps, corners, etc., should be of fireproofed materials and care should be taken to have all trim so placed that it will show its proper projection where the metal lath or expanded metal is applied, leaving at least  $1\frac{1}{2}$  inch for the lath and plaster. It is also essential that all sills be provided with a good strip to prevent any water from getting behind the plaster, care being exercised that the sills are so set that this strip will not be covered with plaster. The lath and plaster should stop about 6 inches above the ground, a good strip being provided at this point to prevent water from entering the foundation.

## Applying the Lath

The lath is fastened with the long dimension of the



Interior View Before Plastering, Showing Outside Metal Lath Applied to the Studding and Wood Rafters.

sheet at right angles to the studding, taking the precaution to see that the dip of the strands is down away from the workman. It is best to begin the lath at the top of the wall, as this will prevent lapping the lower sheets over the upper, thereby preventing the catching of the plasterer's trowel on the edge of the sheets.

The lath is secured to the wood studs with staples and furred  $\frac{3}{8}$  to  $\frac{1}{2}$  inch from the wood, thus causing it to be entirely embedded in the covering of cement stucco. Many of the different types of wire lath and



In Kansas City, Mo., Showing Ribbed Metal Lath on Wood Studding Ready for Stucco. Interior View of This Building Is Shown Above.

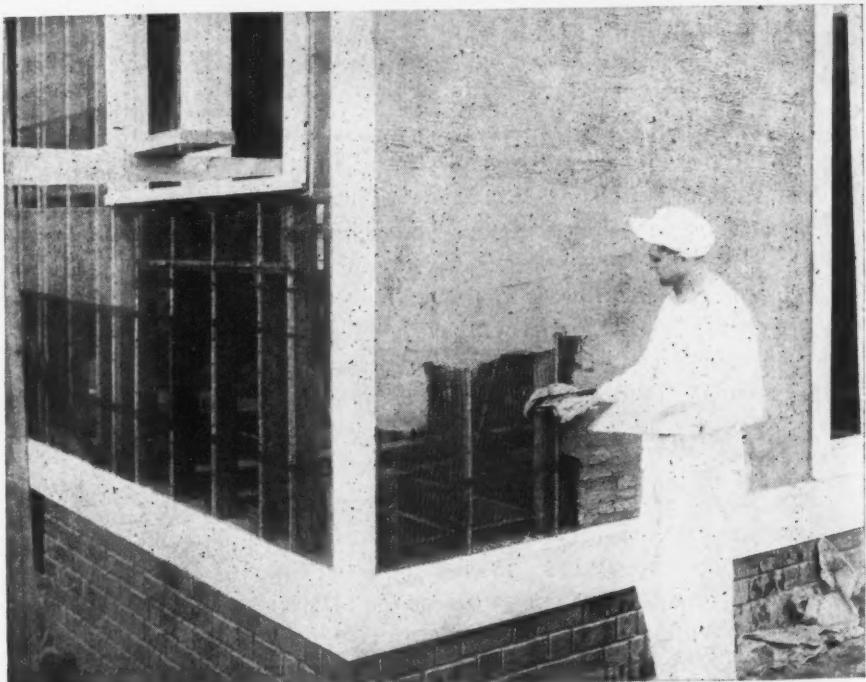
expanded metal have a furring strip, so that wooden furring is unnecessary. The lath is applied to the exterior walls and plastered before the interior lathing is applied, the wall thus becoming vertically a solid slab of cement and metal, which makes for rigidity.

#### Angles and Corners Should Be Lathed

All exposed angles, such as the corners of the house, should be protected by metal lath, or expanded metal bent around them and securely fastened to the lath before putting on the plaster, thus preventing the plaster from becoming defaced or accidentally cracked or chipped off. In applying the sheets they should be locked together at sides and ends, by wiring or clinching them together.

#### Mixing the Plaster

The plaster for the stucco consists of the following mixture: Portland cement, one part; sand, two and one half to three parts; hydrated lime, one-tenth part. The cement and the hydrated lime, after being thoroly mixed dry to a uniform color, are added to the dry sand and the whole manipulated until evenly mixed. Add water to secure proper working consistency, the mortar being thoroly worked. Be careful and do not mix more than can be used up promptly,



Applying the First Coat of Plaster Over Metal Lath in the Exterior Wall of a Stucco House.

as no regauged or hardened plaster should be used.

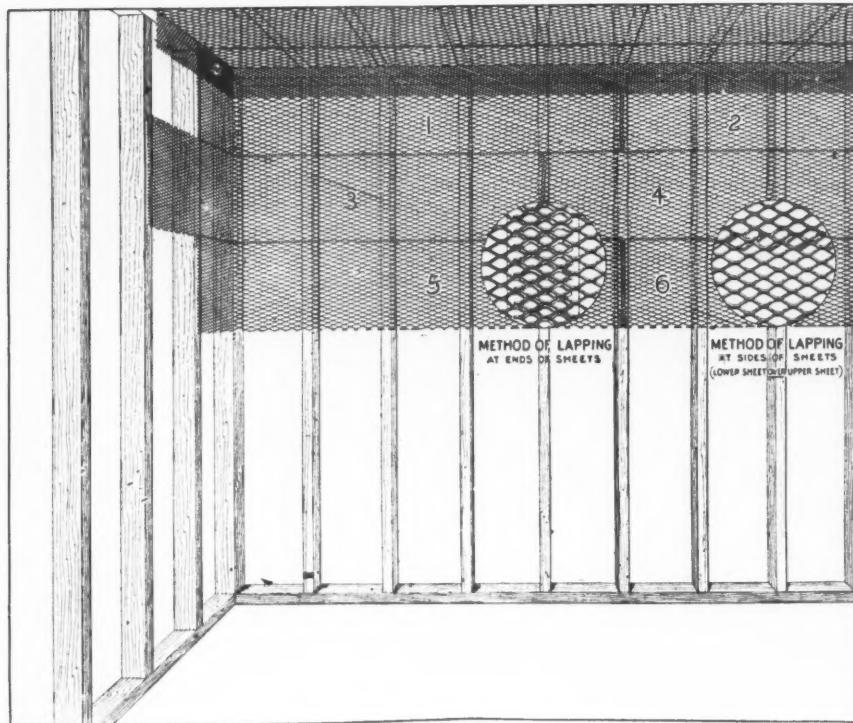
#### Applying the Stucco

Apply the plaster to the outside of the metal lath or expanded metal, adding enough cow hair to get a good key. While this first coat still is wet, scratch over the surface to get the key for the next coat, which can be applied to the first coat as soon as it has set sufficiently to hold it. The last outside coat of plaster should contain a waterproofing material. Back plaster the inside of the lathing between the studs, altho some plasterers prefer to back plaster first and apply the outside coats afterwards. Any desired finish can be given to the stucco.

After the outside wall is finished and the back plastering done, the lathing is applied to the inner faces of the studs.

This is in every way the most desirable construction, as it gives a wall that is fire-resisting, free from cracking, permanent and vermin-proof. However, if a saving in the initial cost is desired, the inside walls may be covered with any other material, including wallboard.

Accompanying this article are a number of illustrations showing how wire lath and expanded metal are used in both exterior and interior walls and how the plaster is applied. A careful study of these illustrations and of the details



Method of Applying Expanded Metal Lath on Wood Construction.

shown will be a great aid to the builder who is called on to build stucco buildings.

#### Many Other Uses for Metal Lath

There are many other uses for metal lath and expanded metal that the contractor and builder will find excellent. Partitions that are non-bearing are constructed easily and well by using the same methods of applying as in the outer and inner walls. Rural builders find expanded metal and metal lath efficient in building corn cribs, granaries, hog houses and other buildings where it is necessary to keep out rats.

There are many kinds of metal lath and expanded metal now being manufactured, the growth of the industry showing that this type of construction is also growing. With some slight differences, the methods of applying given herein are right for all types of this fire-resistant and easily applied material.

For overcoating wood houses, for lathing over brick or hollow tile and for many other uses, expanded metal and wire lath are excellent materials for the builder to use. Knowing these uses and how best to construct with metal lath are things every builder should know.



**P**RICES will never return to the old pre-war levels. Business men who are holding back, waiting for the old prices, are chasing a rainbow. Business men should face the facts. To talk reverently of 1913-14 prices is to speak a dead language today. The buyers of the country, since the armistice, have made an unexampled attack upon prices thru their waiting attitude, and yet price recessions have been insignificant. The reason is that we are on a new high price level, which will be found a stubborn reality. Business men are going to find out that the clever man is not the man who waits, but the one who finds out the new price facts, and acts accordingly."—PROF. IRVING FISHER, of Yale University.



**P**RICES are not coming down in America. The manufacturer who is halting upon the theory that the bottom is going to drop out of raw material will find the bottom out of his business before it is out of raw material. The retail merchant who is waiting until he

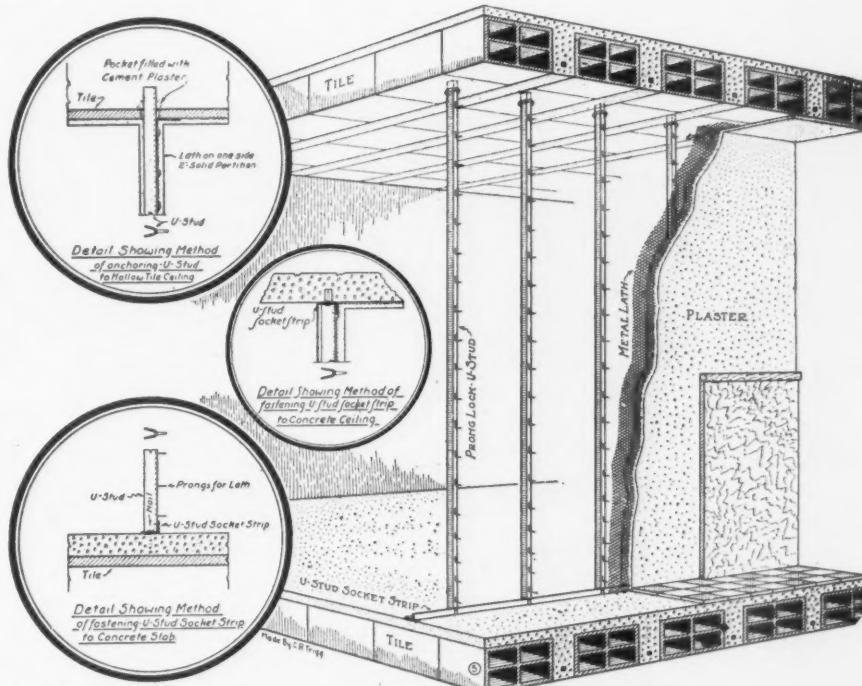


Residence With Exterior Walls Ready for Plastering.

can purchase cheaper goods will have his store closed by the sheriff and no way to get cheaper goods upon his shelves.

"The man who has denied himself and stinted himself during the period of the war and is now husbanding his resources upon the theory that prices are going to take a tumble may succeed in washing his shirts to shreds before he can buy a much cheaper one."

—VICE-PRESIDENT THOMAS R. MARSHALL.



Drawing No. 5

This partition finishes two inches thick, the pressed steel prong lock studs being completely imbedded in the mortar. It is especially desirable where saving in space is a necessity. Recommended for stairways, elevator shafts, storage houses, mercantile buildings and structures of like character.

The partition when completed forms a homogeneous mass and will resist the most intense fire for hours. Water from fire hose, applied while wall is red-hot, will not cause the partition or wall to disintegrate, warp or "blow".

The studs are held at top by channel or angle track and by angle at bottom, clips having been punched out at proper intervals to receive studs.

## Blue Prints of a Fine Stucco House and Garage

POPULAR TYPE OF HOME IS SHOWN IN THE BLUE PRINT SECTION THAT FOLLOWS

DURING the home building that will be a great part of the activities of the building industry this year, there will be a great demand for stucco houses of all kinds. These homes are attractive and provide the owner with an exceptionally good home.

In the blue print section that follows are shown plans for an extraordinarily up-to-date stucco house of six rooms. This design will be especially attractive for the automobile owner, as there is a garage of the same architectural style attached.

While this is termed a six-room house, the additional space provided by the sun parlor and den make it a much more spacious home. The dimensions are 30 by 40 feet, 6 inches, with a porch projection of 10 feet. The large living room and dining room, the den and the three large bedrooms and extra amount of closet space make this house the exception. The garage is 19 by 12 feet.

Every feature that now is built into the modern home is provided in this design. For those who want a medium-sized stucco house, with or without the

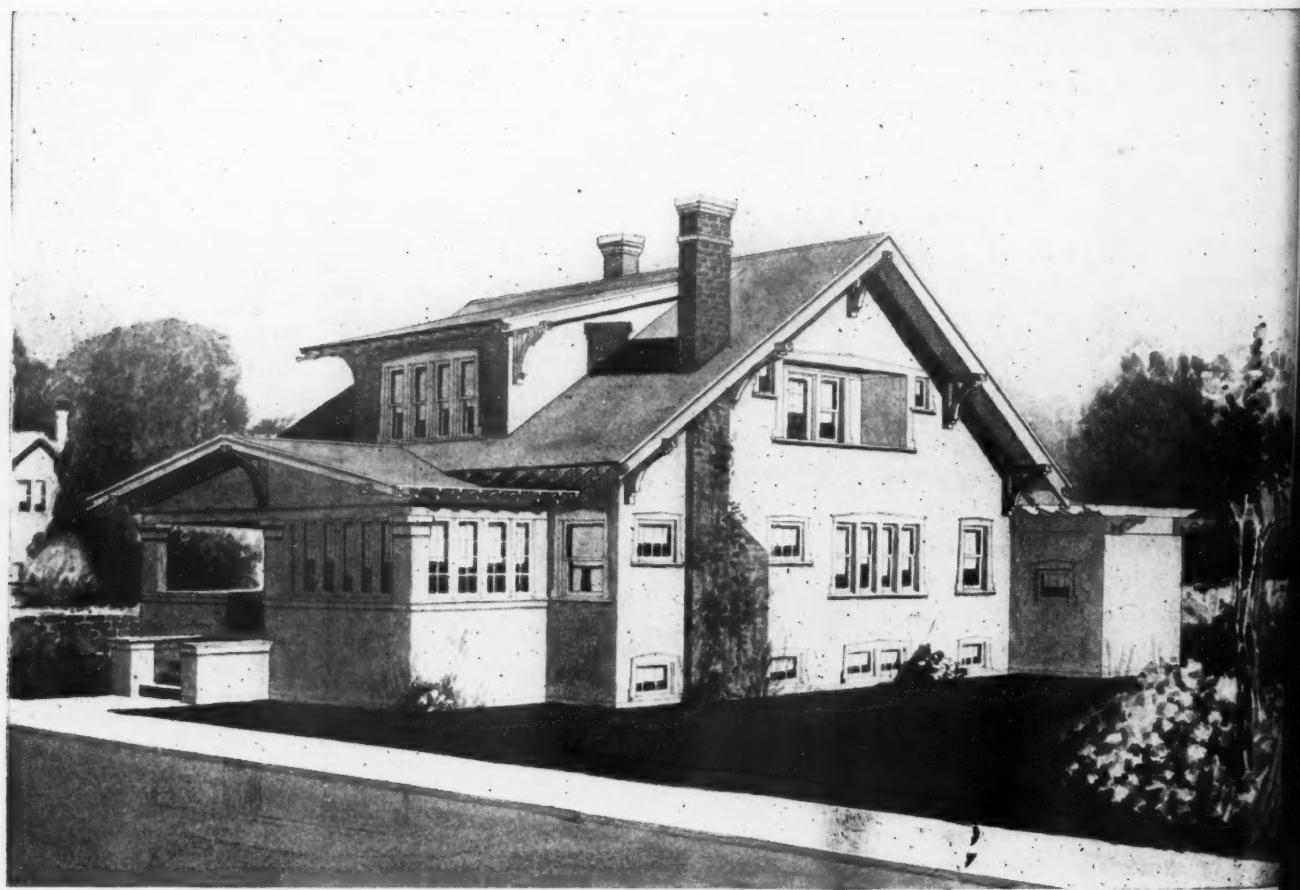
garage attached, this is an exceptionally good design—one that contractors and material men will find good.

The first page of the blue print section shows the first floor plan; the second page the front elevation and cross-section; page 3, the basement plan, and page 4 the second floor plan.

These plans show the practical architect and builder what a fine residence this stucco house will be. The garage is so located that it is easily heated in the winter and access to it can be had without going outdoors. This is a feature that appeals to autoists; the best present-day architects are putting it into their plans.

Stucco houses are exceptionally popular nowadays because of their artistic appearance and the simplicity of construction made possible thru the various materials to which the plaster, both outside and in, is applied.

Here is a home that anyone can be proud of. It will be just what many prospective home builders want—the kind the contractors like to build and the dealers like to supply the materials for.



**SIX-ROOM STUCCO HOUSE AND GARAGE.** This design is a beauty. The exterior is such that any home builder can be proud of it, while the interior arrangement provides the room for a good-sized family. The dimensions of this house are one story, 30 by 40 feet. The floor plan is excellent, there being a large living room, sun parlor, den, dining room and kitchen on the first floor, and three bedrooms and bath on the second floor. Here is the type of home that fits equally well into city or country surroundings.

BLUE PRINTED PLANS WILL BE FOUND IN THE FOUR-PAGE SUPPLEMENT FOLLOWING.

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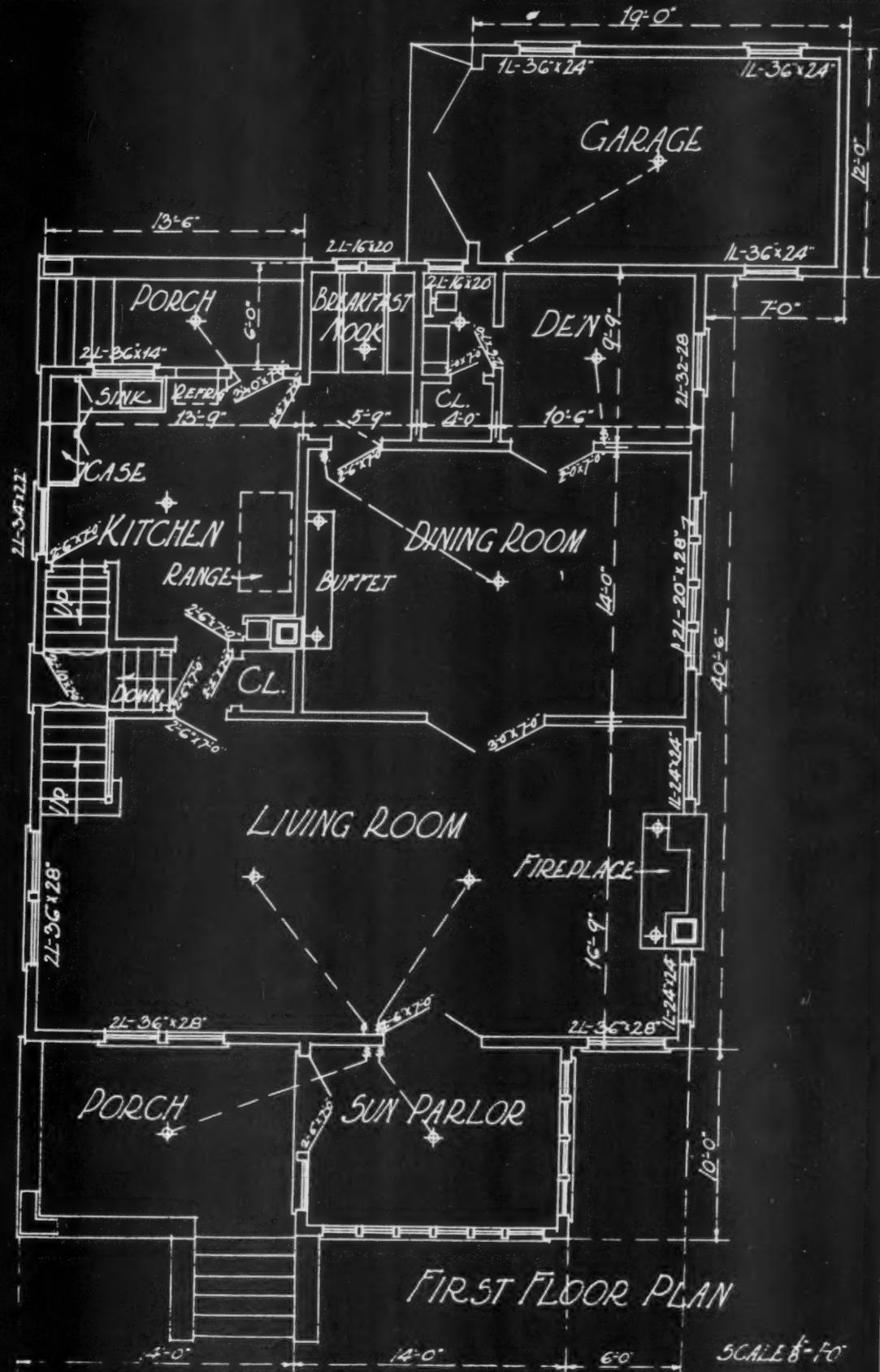
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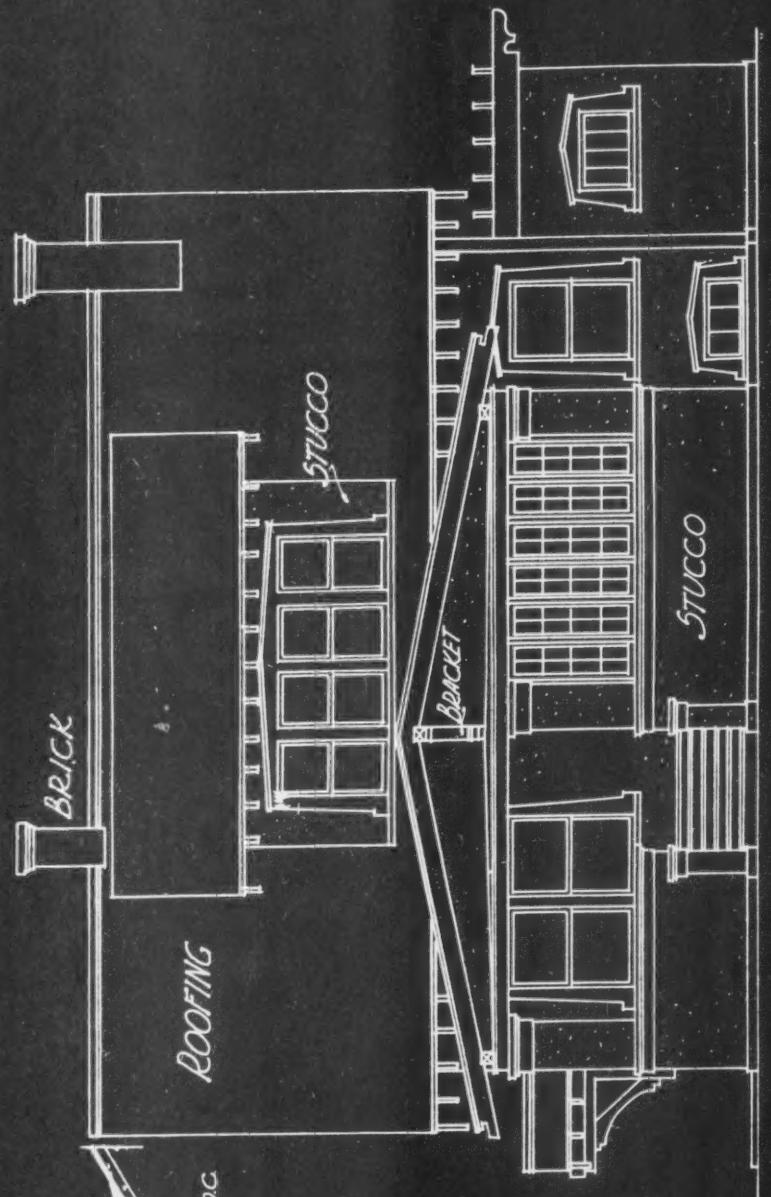


# AMERICAN BUILDER BUILDING PLANS



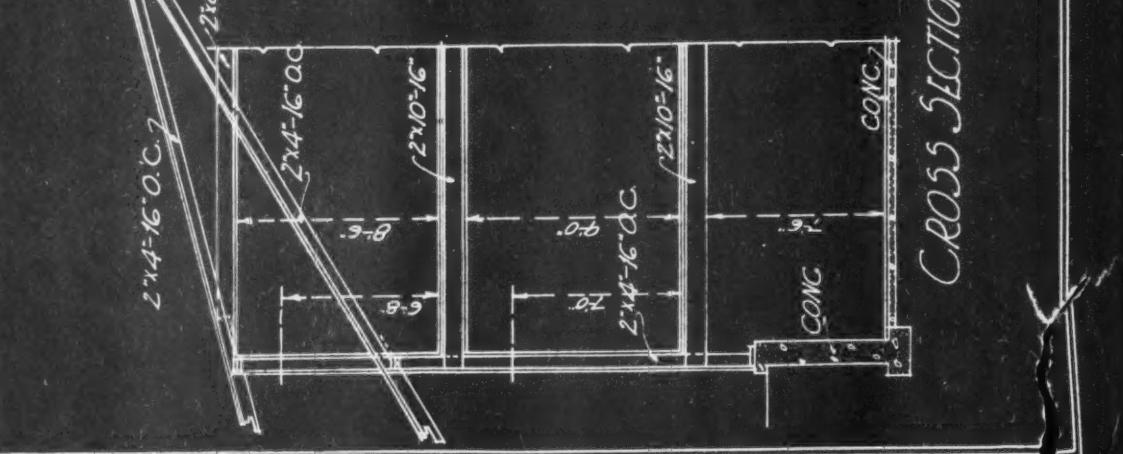
RESIDENCE WITH GARAGE - SHEET NO. 1.

# AMERICAN BUILDER BUILDING PLANS



FRONT ELEVATION

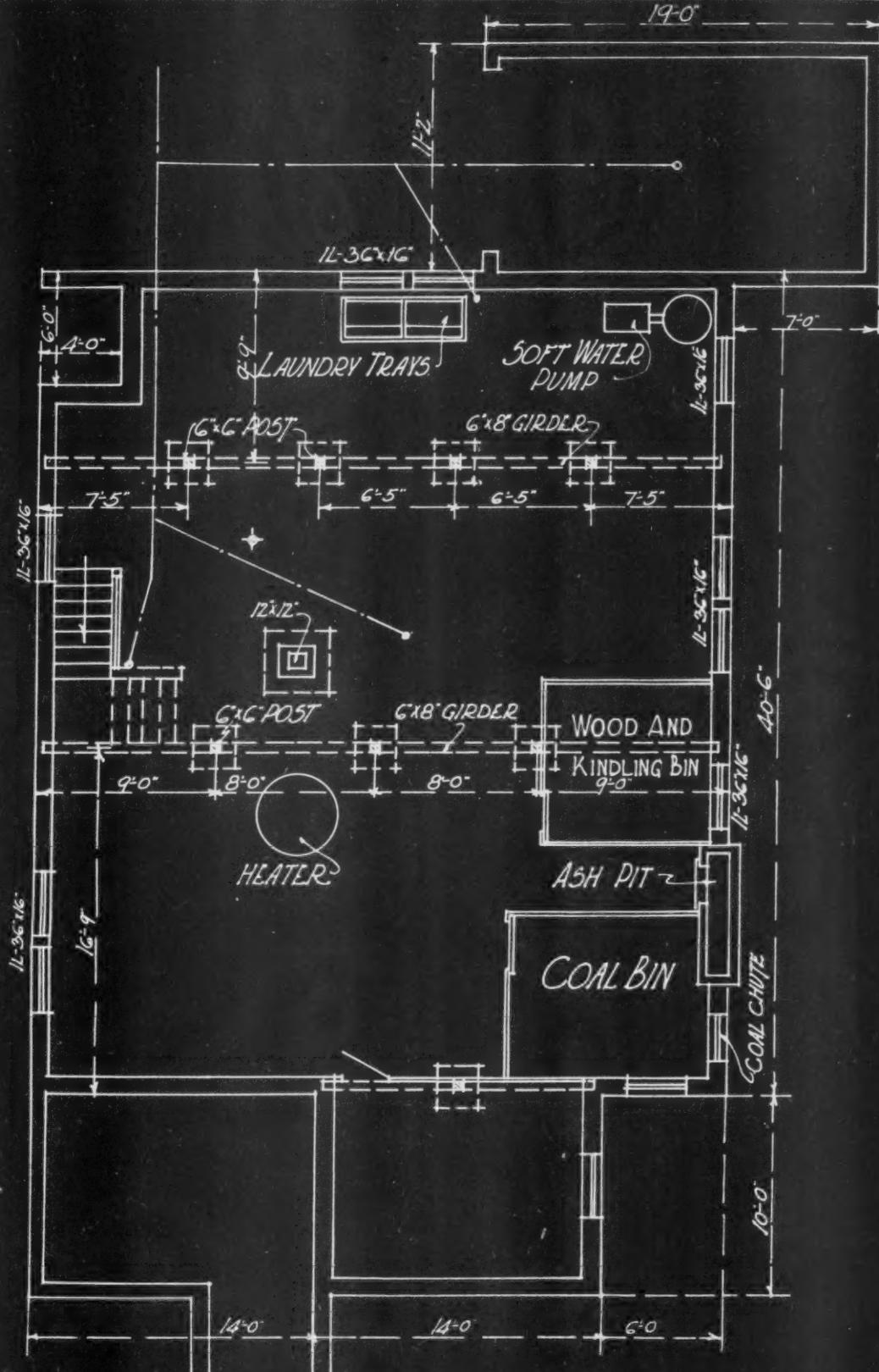
SCALE  $\frac{1}{8}$  = 1'-0"



CROSS SECTION

RESIDENCE WITH GARAGE - SHEET NO 2.

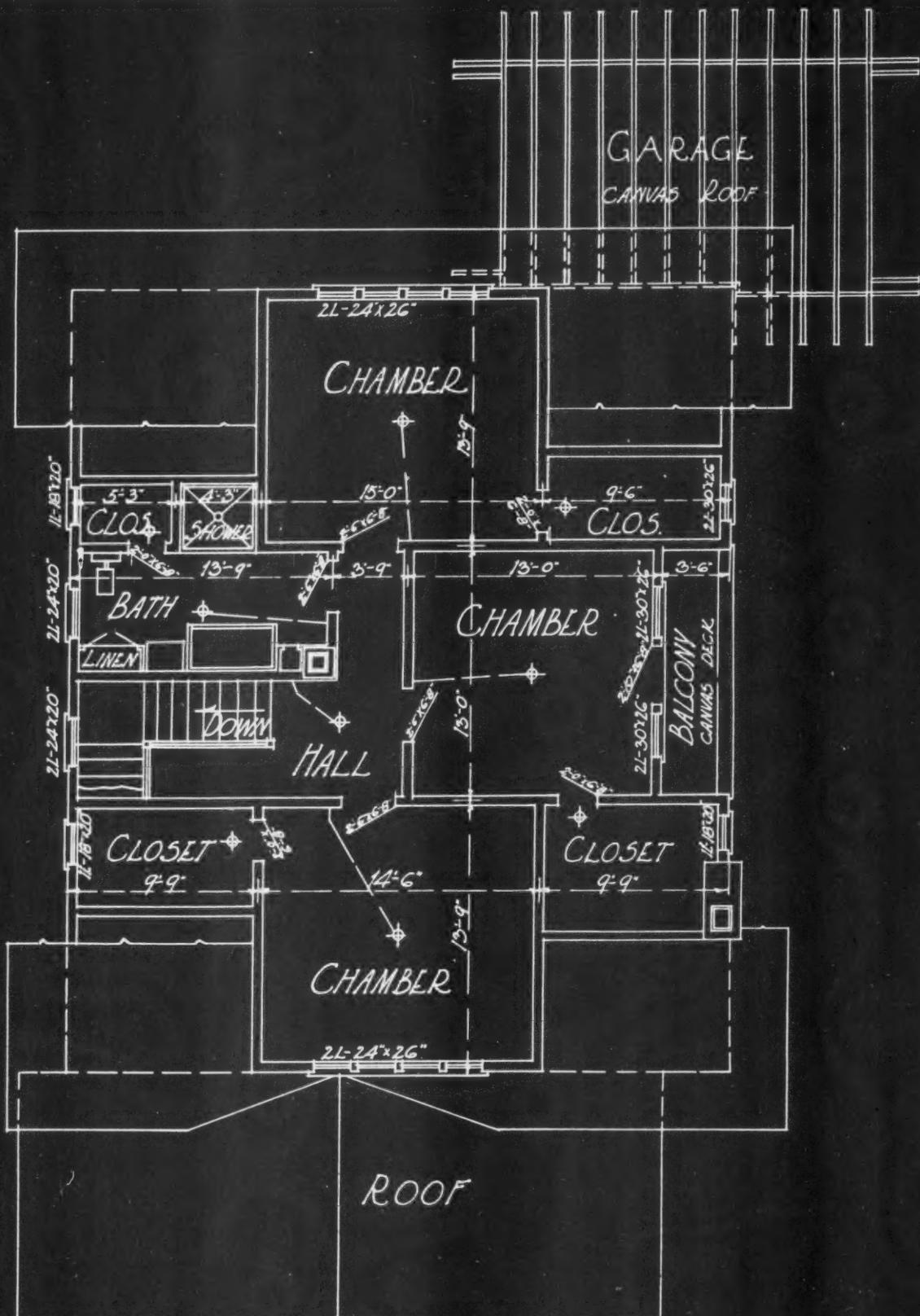
# AMERICAN BUILDER BUILDING PLANS



SCALE  $\frac{1}{4}$  = 10'

RESIDENCE WITH GARAGE - SHEET NO. 3.

# AMERICAN BUILDER BUILDING PLANS



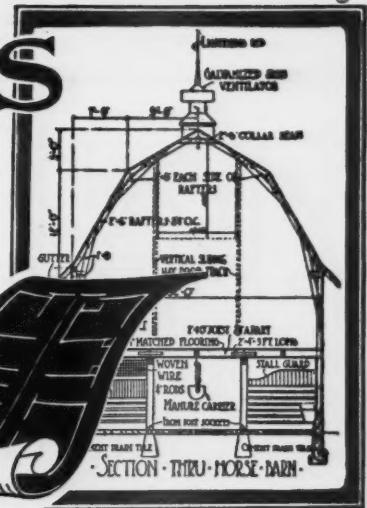
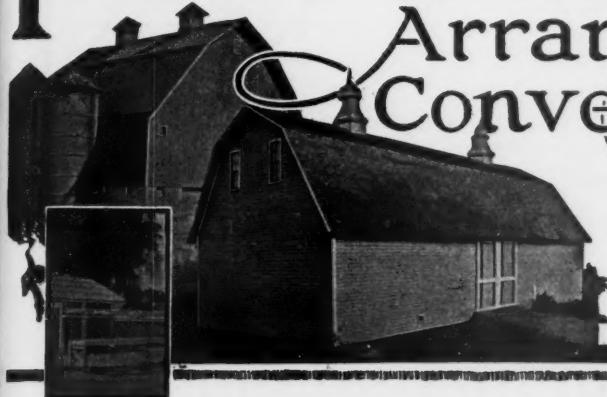
RESIDENCE WITH GARAGE - SHEET NO.4.





# FARM BUILDINGS

## Arranged For Convenience -



### All the Chores Under One Roof

THIS BARN, BIG AND EFFICIENT, WILL HOUSE THE WORK STOCK AND CATTLE OF A LARGE DAIRY FARM

THE modern dairy barn should be built like a factory. Because it is a factory, housing very expensive and delicate machinery for producing milk, namely, the high bred dairy cow. It should be given the thought and intelligent planning for efficient operation that is necessary for any successful factory.

As a matter of fact, nowadays a farmer hasn't much choice in the matter. A large, inefficient dairy is hardly possible any more. The farmer that wants to keep fifty heavily producing cows simply must have an efficient dairy barn, or he will be unable to get the labor for the job.

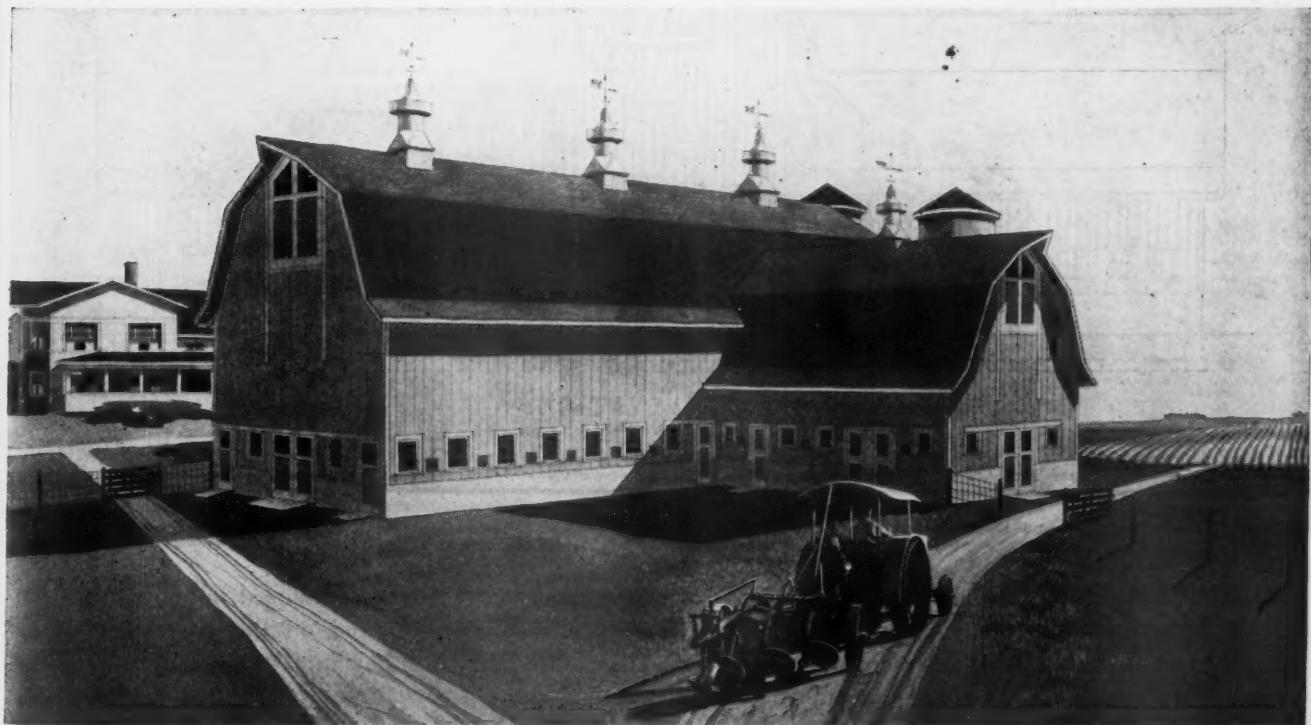
Labor saving is the keynote of modern barn design and equipment. Many of its features are planned to

keep the cows up to concert pitch, so to speak. Such are ventilation, drinking cups, cork floors. These are of first importance. But it is fair to say that without modern labor saving design and equipment the large herd simply could not be kept; hence, the dairyman's convenience is the very first consideration.

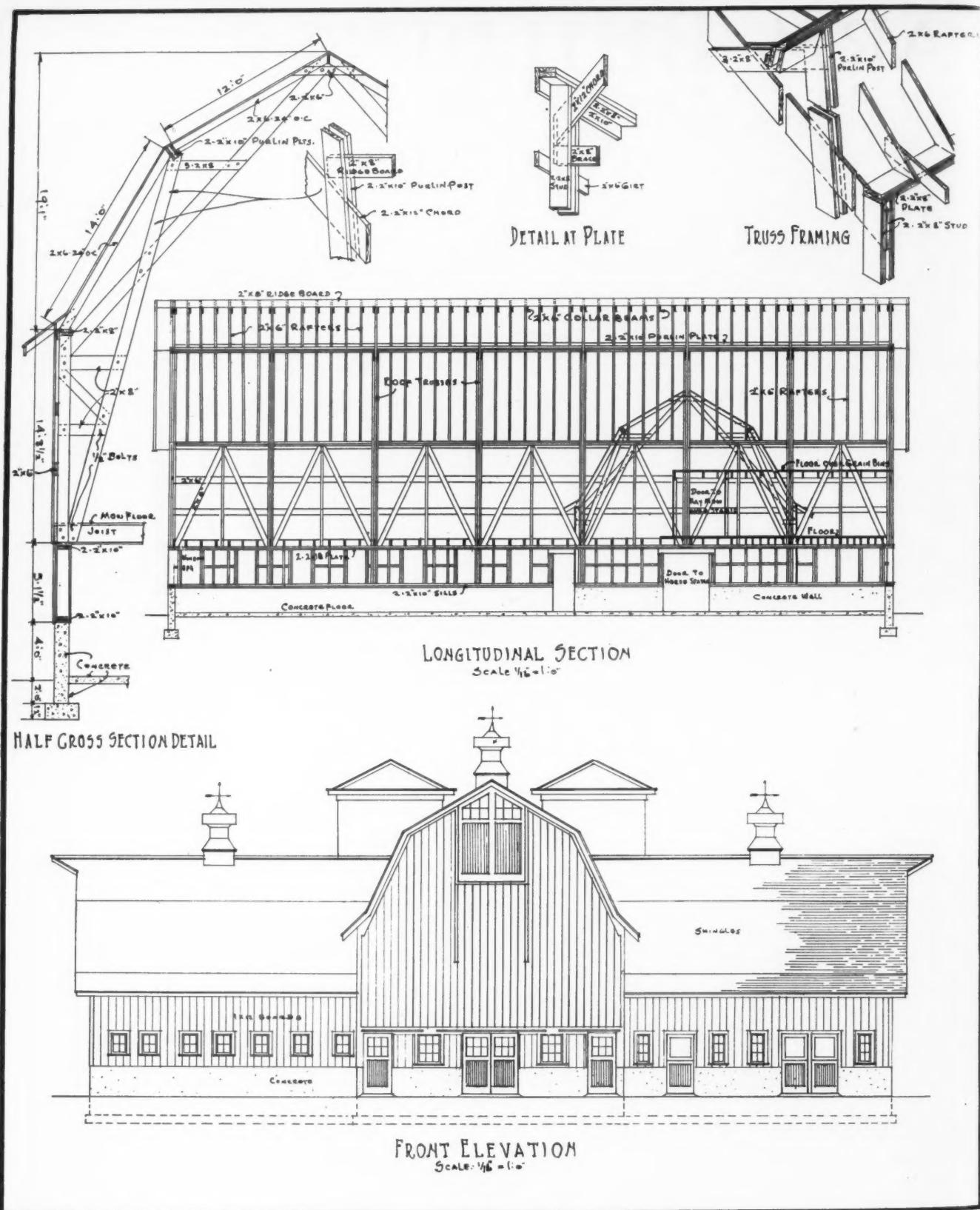
The barn illustrated is a fine example of what modern architectural and mechanical skill can furnish. It is roomy, complete and compact. It will house five teams, forty-six cows, the herd bulls and the young stock.

It is built and equipped to save labor and keep the herd in the pink of condition.

The tracks of the feed and litter carriers are nicely calculated to carry their freight with the fewest pos-



This Barn Takes Care of Forty-Six Cows, the Herd Bulls and the Young Stock, Besides Five Teams of Horses. Both the Horses and the Tractors Are Kept Busy, Raising Enough Feed to Fill the Barn and Its Occupants.

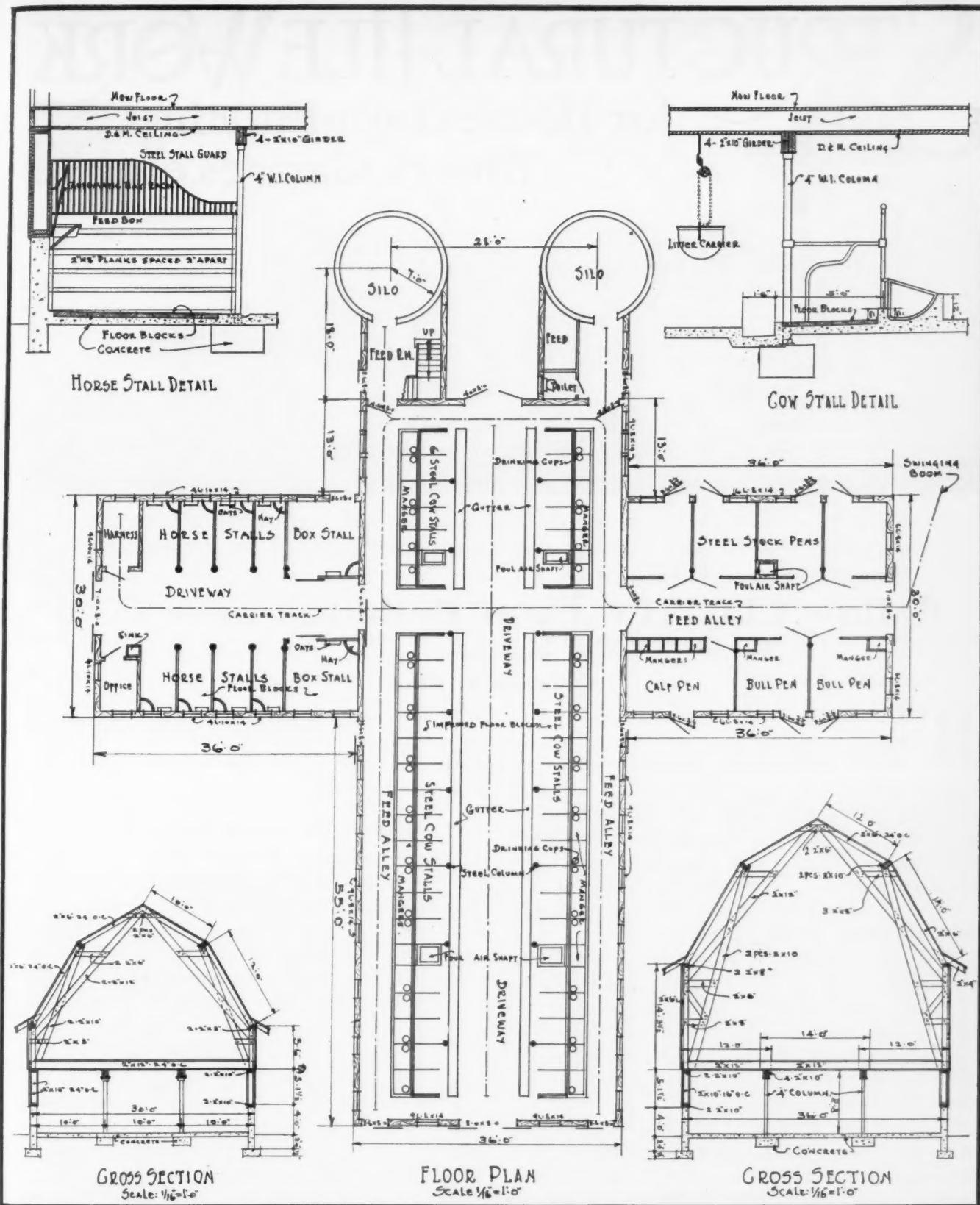


**Front Elevation, Sections and Details Show How the Big Barn Is Built. The Foundation Wall Is Especially Noteworthy, Set on Footings 24 Inches Across, 2 Feet Below the Grade Line.**

sible steps. There are two large silos, one on each side of the barn, and the feed carrier runs in a straight line from each in front of the mangers of the cow stalls. Feeding the cows is of course the big chore. The feed track turns at right angles into the wing for the bulls and young stock, built conveniently at

the silo end. The horses, housed in another wing of like size similarly placed on the other side of the barn, are fed thru hay and grain chutes, from the second story.

The litter carrier track, which serves a single gutter for the cows and the horses, runs to four doorways.



The Sections Show the Immense Unobstructed Hay Mow and Its Construction. The Completeness of the Barn Equipment and the Convenience of the Layout Appear in the Floor Plan. Notice the Individual Drinking Cups at the Steel Cow Stalls, the Complete Trackage for Feed and Litter Carriers, the Doors on Both Sides of the Pens for Bulls and Young Stock.

and can be dumped into the spreader at whichever one is most convenient. The driveway, thru all four door, is ample for wagon or spreader. At the doorway of the young stock wing there is a swinging boom, sixteen feet long, to take care of excess of litter due to bad days when the spreader cannot be used.

There is an individual drinking cup for every cow, an installation that saves many laborious hours and markedly increases the milk flow. The stalls are steel, and the mangers designed so that the greedy cow cannot rob her neighbor. The floor is of concrete, except in the stalls, where cork is preferred.



*If you will send us a plan or sketch of the building you are thinking of erecting, Mr. Brightly will tell you about the sizes, shapes and quantities of hollow building tile that will best serve your requirements.—EDITOR.*

## Hollow Clay Tile Farm Buildings Save Feed

WARM, DRY HOUSES HELP ANIMALS KEEP WARM AND ALLOW THEIR FOOD TO PUT ON FAT AND MAKE THEM MORE PRODUCTIVE

By James A. King

BY CONSTRUCTING a barn or hog house of hollow clay building tile, it has been proven, the contractor will help his client save much feed for the animals which are kept in them. The food which an animal eats is the fuel with which is kept warm the building in which it is housed. And it is a fuel far more costly than is even the hard coal with which many houses are heated. The same characteristics of these blocks which save fuel in a house, save feed in a barn or in a hog house.

The feed which an animal eats is first used to heat its body and keep it warm, in spite of the coldness of the air which surrounds it; so that it is used not only to heat the animal's body, but also the air in the building in which it is housed. Next, a portion of this feed is used to restore the used-up tissue of the animal's body. Only after these things have been done is any feed used to lay on fat or produce milk. By having a warm building for the animals to live in, the amount of feed which is used to keep them warm is reduced. By just that much is reduced the amount of feed which must be given fattening animals to fit them for the market, or the amount which must be given the dairy cows to produce a certain amount of milk or butter fat. The cow which shelters herself on the lee side of a straw pile during our cold winters does not give much milk, because it requires practically all the feed she can eat to keep her body warm and keep up the condition of her body. A cow housed in a barn built of tile gives more milk than if she

were housed in a poorly constructed building; because it requires less of her feed to keep her warm; more of the feed she eats is available for producing milk and butter fat.

### Floors of Tile to Keep Animals Warm

There is no warmer or better floor for a hog house than one built of tile. You prepare the ground just as tho you were going to make a concrete floor. Then you lay a layer of these tile, which gives a dead air space about three inches thick. On top of this you place a thin layer of rich concrete corresponding to the top layer of a concrete floor. This concrete is not needed to give strength to the floor, as those tile are abundantly strong to carry the load placed on them. It is simply to give a smooth surface to the floor.

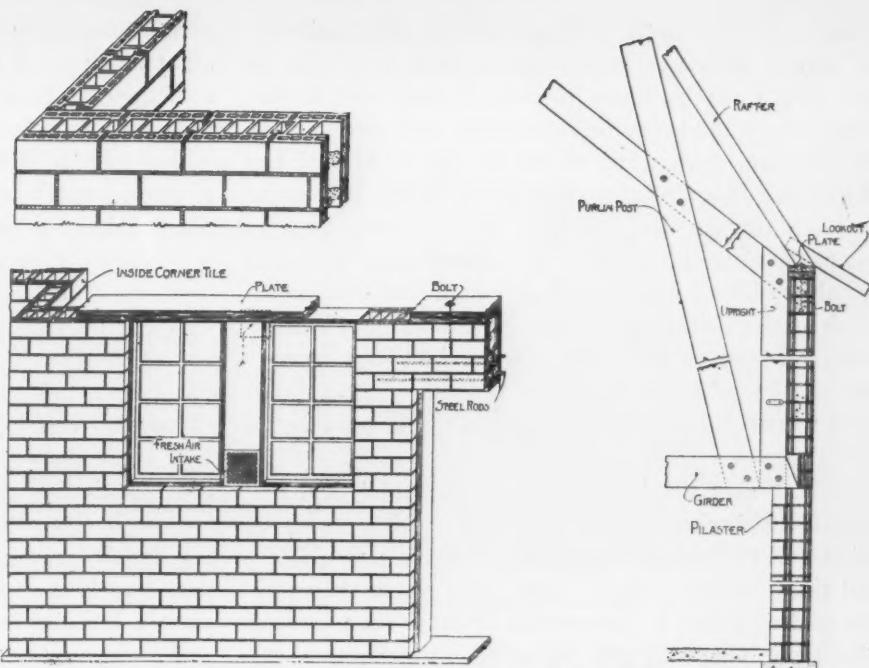
Some years ago an experiment was performed with a herd of hogs. In this herd there were so many hogs that when lying down "one deep" they covered considerably more than one-half the floor of their house. One-half of the floor was made of concrete in the usual manner. The other half was made of tile surfaced with concrete, as just described. Every night during the winter those hogs fought for the privilege of sleeping on that part of the floor which was made of tile. The hogs knew nothing about how the floor was made. The only thing they knew about it was that a part of that floor was warmer to sleep on than was the other part. And they fought like good fellows for the privilege of sleeping on that more comfort-

able part. A hog may not know a great deal, but he does know when he is comfortable, whether he knows the reason for it or not.

This matter of a warm floor is especially important in a farrowing house, cold floors give little pigs leg weakness and many other troubles which often lead to death itself. Hogs raised on a tile floor are never troubled with these things because the floor is warm. When hogs are worth the price they are these years, the owner cannot afford to raise pigs on a cold floor. They may be forced to grow up on a cold floor, those which do succeed in reaching to a full-grown hoghood; but the farmer can't afford to do it. It is true that if a hog is given half a chance he will make at least some money. But it is even more true that if he is given a full chance he will make a lot of money. At the present prices of hogs and feed they should be given the chance.

### The Buildings Will Be Dust-Proof

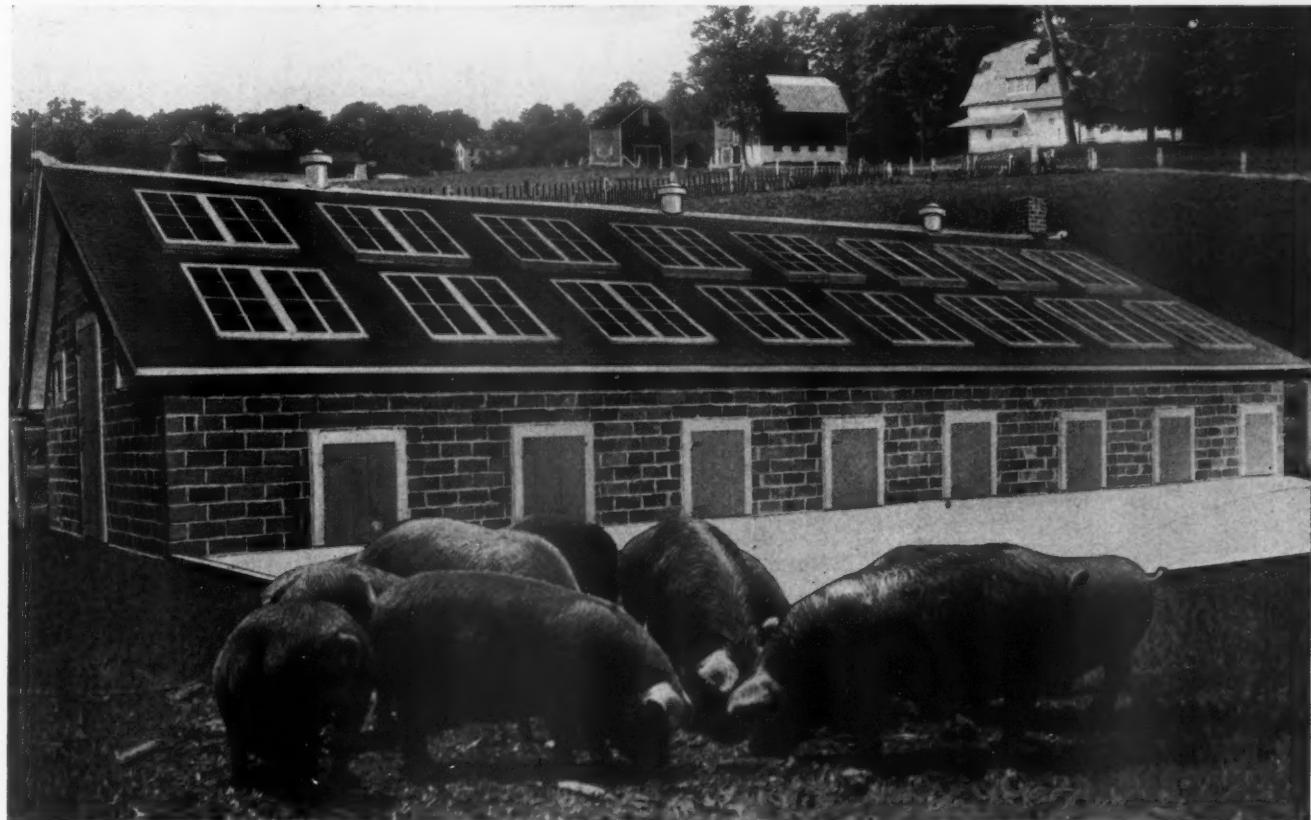
A war is being waged constantly in the bodies of men and animals. This is the war against disease germs. Most of the time the bodies of animals contain more or less of the germs of the various conta-



Wall Section and Cross Section of Hollow Tile Farm Building.

geous and infectious disease. These germs are striving to gain control of the animal's body. Thru various agencies the body of the animal is resisting the onslaughts of these germs, trying to prevent them from getting the control. When the disease germs get control, the animal becomes sick. So long as they are under the control of the fighting hosts of the animal, they are well or in good health.

The resisting powers of the animals should be main-



Here Is a Modern Hollow Tile Hog House with Concrete Feeding Floor. Every Progressive Farmer Now Wants Buildings Like This.

tained at the top notch. This is the simplest and easiest way in which to keep your animals well. To do this they must be given plenty of good, wholesome food; warm and comfortable quarters; pure air to breathe, and pure water to drink. If an animal has to live in cold and draughty quarters, or has to breathe foul and impure air, its body is weakened and its power to resist the attacks of these disease germs is greatly reduced. Under these conditions it becomes much easier for these disease germs to gain control and make the animal sick. Proper buildings remove two of the principal causes of disease. The animals have warm and comfortable quarters, and pure air to breathe.

Hollow clay tile buildings are warm and dry, and free from drafts. This removes the chief causes of colds and their attendant evils. A cold in itself is a bad thing for the animal. But even worse than that, the cold may lead to pneumonia or other more serious diseases. The cold will so weaken the body of the animal that the germs of these other diseases contained in the system may gain control. A large percentage of our cows are infected with at least some of the germs of tuberculosis. A bad cold which continues for a long time will often develop into a bad case of tuberculosis, simply because the cow's body was so badly weakened by the cold it could not longer successfully resist the attacks of the tuberculosis germs.

Cold floors are very bad for all farm animals, es-

pecially for cattle and hogs which lie down during the night much more than do horses. The walls and the roof may be windproof and dry, and still they will be very subject to colds and all their accompanying evils if they have to sleep on cold floors. You cannot afford to build a cattle or a dairy barn, or a hog house, and not put down a sanitary and warm floor. One of the very warmest floors which you can put in such a building is made of tile. If you cover it with a thin layer of concrete as already described, you have the very excellent thing, a warm concrete floor. A cow can lie down on such a floor in the dead of winter and run no chances of developing udder trouble.

If the walls and the floors are made of tile they will not absorb liquids which later decompose and make the air foul so that the animals are constantly breathing impure air and so lower their power to resist disease. If a diseased animal should be admitted to such a building is a very easy matter to wash clean and fumigate floors and walls thoroughly so as to remove all possibility of the other animals contracting its disease.

There is no building material which is more sanitary than hollow clay building tile. There is none which makes a building more warm and dry. There is no material which will make your buildings more healthy, sanitary, and diseaseproof. By constructing buildings of them, your client's animals will be practically free of most diseases, diseases which ravage the livestock.



The Popularity of the "Movies" Has Brought Thousands of Good Jobs to Builders. Here Is One of Hollow Tile with Brick Veneer, the Type of Fireproof Construction That Is in Demand.



Dairy Barn and Cow Stable of E. J. Lehmann, Lake Villa, Ill. Louden Machinery Company, Architects.

## Fine Example of Modern Dairy Barn and Cow Stable

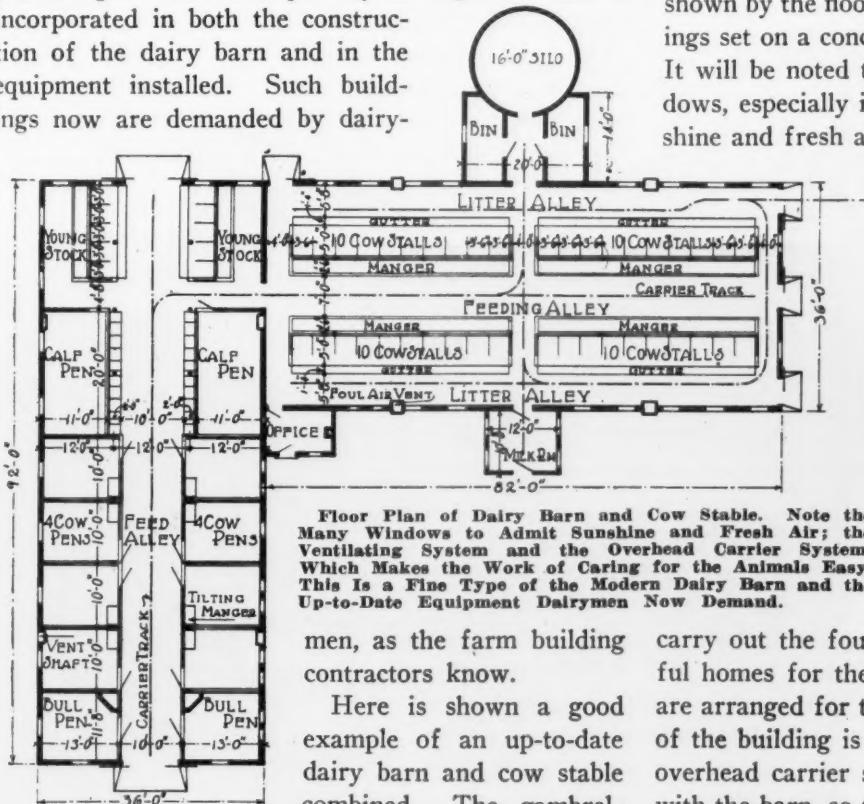
BARN HOUSES COWS, CALVES, BULLS AND YOUNG STOCK WHILE STABLE PROVIDES SPACE FOR FORTY MILKERS—EQUIPMENT IS NOTABLE FEATURE

**H**OUSING and caring for the herd on a modern dairy farm has been brought to a pretty exact science by farm building architects. Every feature that tends to keep the cows healthy and producing a maximum quantity of high-test milk is incorporated in both the construction of the dairy barn and in the equipment installed. Such buildings now are demanded by dairy-

supply the herd with fresh feed all winter.

### Some of the Important Features

The arrangement of the stalls and some of the important features of construction and equipment are shown by the floor plan. These are plank frame buildings set on a concrete foundation, with a cement floor. It will be noted that there is a great number of windows, especially in the cow stable, that let in the sunshine and fresh air. Ventilating flues are provided to



Floor Plan of Dairy Barn and Cow Stable. Note the Many Windows to Admit Sunshine and Fresh Air; the Ventilating System and the Overhead Carrier System, Which Makes the Work of Caring for the Animals Easy. This Is a Fine Type of the Modern Dairy Barn and the Up-to-Date Equipment Dairymen Now Demand.

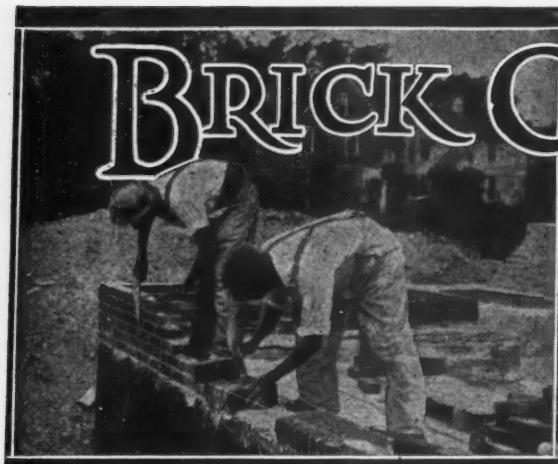
men, as the farm building contractors know.

Here is shown a good example of an up-to-date dairy barn and cow stable combined. The gambrel-roof barn houses the cows, their calves, the young stock and the bulls on the ground floor, while the mow provides storage room for the winter supply of roughage. The monitor-roof cow stable houses 40 cows, while adjoining it is a silo of sufficient capacity to

carry out the foul air, making both buildings healthful homes for the herd. In the cow stable the stalls are arranged for the cows to face in. Thru the center of the building is the feeding alley, equipped with an overhead carrier system connecting with the silo and with the barn, so that both kinds of feed can easily be taken to the mangers. The carrier system also extends over the litter alleys for the removal of manure to the pit at the end of the cow stable. A water system, connecting with individual drinking cups at each stall, sup-

(Continued to page 126.)





# BRICK CONSTRUCTION for Modern Carpenters and Builders



## The Use of Face Brick Gives Many Artistic Effects

BUILDERS GIVE THEIR CLIENTS ARTISTIC HOMES BY USING THIS MATERIAL

**B**RICK is a material that has many uses in building. Solid brick walls have been laid up for many years; the beginning of the manufacture of face brick brought about its use as veneer and for decorative features of buildings of all kinds. Nothing supplies a house with a more attractive feature than a porch laid up of face brick. In fact, there are so many uses for common brick, face brick and brick of color that every builder has a demand for this class of construction.

A novel use of face brick in connection with a brick house is shown in the accompanying illustration. This curved edge to the steps leading up the terrace and the face brick in the stairs are out of the ordinary, but it is something that will fit nicely into the architectural scheme of many homes.

### Face Brick Adds Artistic Touch

From that portion of the porch and house that is shown in this illustration it will be seen that this is an exceptionally artistic building. The face brick give it an added touch that appeals to the home builder. Whether the house itself is of brick or not, a brick porch and a brick walk and steps border will improve its appearance wonderfully.

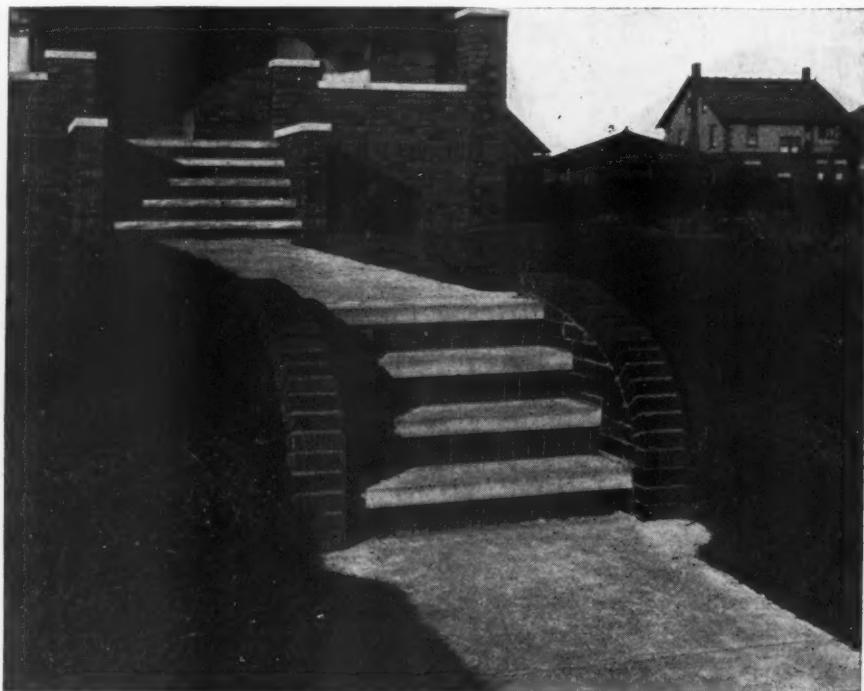
Building with brick will give satisfaction to every client who wants a substantial house of good appearance. The use of face brick in the exterior walls and porches adds to that satisfaction. And as now brick of all kinds is available, there will be a good demand for houses and other building of this material during the great building era that is here.

### Promoting Building and Material Sales in the Yard Salesroom

**I**N these days of strong competition and progressive business methods everybody advertises what he has for sale. While the violet has been called modest and shrinking, it, too, believes in advertising, for it raises its bright-hued head above the green leaves and tells the world where it is.

It may seem a far cry to compare a violet with a brick. But bricks now have as bright and attractive hues as the violet, and they too should be advertised. If they are put out where prospective home builders can see them, and are placed in surroundings where their natural beauty is displayed to good advantage they will move right out of the yard.

(Continued to page 92.)



Face Brick Has Many Uses in Adding to the Attractiveness of a Home.

First of Three

# “Build now-”

## NEVER BEFORE

in the history of this country has the building outlook been so bright.

Recent government investigations show that over 1,000,000 homes are needed at once simply to allow building to catch up with our ever increasing population. Within the next 12 months we must make up for the halting of all but essential construction during the war and at the same time provide for the normal development of building during the coming year.

The cost of building material depends upon the cost of raw material, production and transportation. The cost of production is the largest item, and it in turn depends largely on the cost of labor. Wages are not going down. Yet, even at present prices, building material, in terms of wages, wheat or profits, is low.

With both the demand and the cost in your favor you are on the threshold of the biggest building boon America has ever seen.



## THE STANLEY WORKS

NEW BRITAIN, CONN., U. S. A.

New York:  
100 Lafayette Street

Chicago:  
73 East Lake Street

“Use Ball Bearing Butts for Permanence”

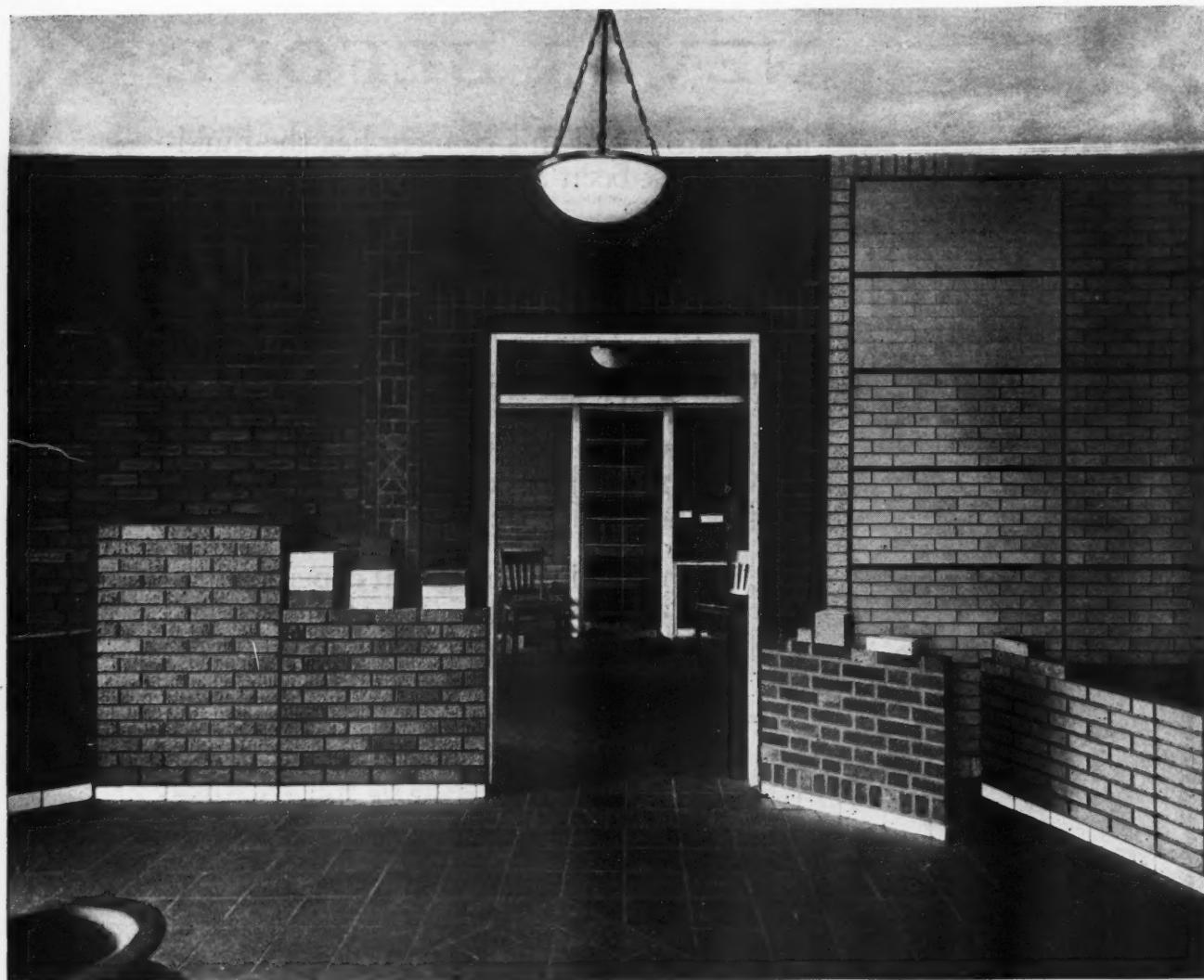
**How One Concern Advertises Brick**

How one enterprising material dealer makes his clients want to buy brick is shown in the accompanying illustration. Brick neatly piled are more attractive than those thrown in a heap; but when brick are laid up so that the customer can see them as they will look in the walls of the house, or porch, or whatever sort of structure he intends to build, they have the true appeal.

This brick exhibit was laid up in the yard office

men should board up the fronts of their stores and make people come in and ask for what they want to buy. The only difference between one merchant and the other is that the drygoods man has found that it pays him to put in window displays and show his goods to the best advantage inside his store.

Building material dealers are learning the same thing and there are hundreds of yard salesrooms where the different kinds of materials are shown as they will appear in place.



Interior of the Sales and Display Rooms of the George H. Black Co., Buffalo, N. Y. This Exhibit Makes People Want to Build of Brick.

and salesroom of the George H. Black Co., Buffalo, N. Y. The different kinds of face brick were shown just as they would appear in the house, or porch, or in the fireplace. What artistic designs could be made of brick in the trim of the house also was demonstrated.

**Opportunity for Every Dealer**

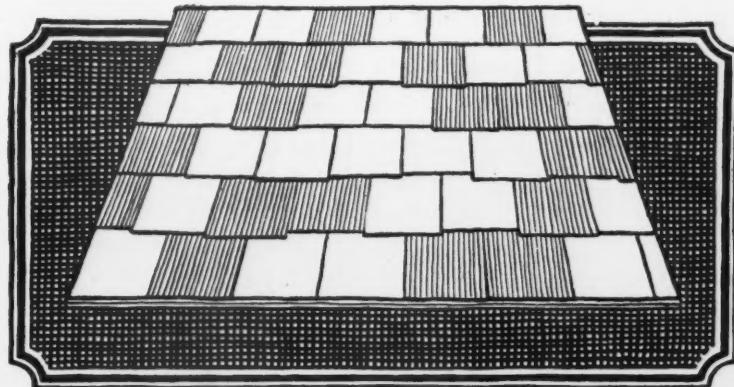
Dealers having salesrooms in connection with their offices have a fine opportunity to help promote building and the sales of the materials they handle. There is no more reason why the dealer should not display his goods than why the drygoods or clothing-store

Creating business is just as important in the yard

salesroom as is selling the materials after the demand has been created. To create a desire to have a building of brick, or a new porch with face brick pillars, or anything else that can be constructed of this material, or other materials, is not a hard job. The dealer needs walls in his salesroom and office. Why not construct them of the materials he has for sale? There they will not only perform a useful service, but will be sales-producers as well. An artistic material display is an essential in the yard salesroom.

Enterprising dealers are making their offices the center of building activity by seeing that they are attractive and interesting.

You don't have to hesitate; there's a place for each nail



AND there are three methods of laying Johns-Manville Transite Asbestos Shingles—straight, hexagonal and diagonal. You can't lay them wrong. You simply tack nails through the side holes in each shingle, and place the copper storm nail as shown in directions.

—not only that  
but they're easier to lay

Johns-Manville Transite Asbestos Shingles make beautiful, fire-proof, time-defying roofs. Ask us to send you our booklet which describes these popular shingles, and explains the simple method of laying them.

This booklet costs you nothing, but it's worth something to have.

H. W. JOHNS-MANVILLE CO.  
New York City  
10 Factories — Branches in 63 Large Cities



And also through—

**Asbestos**

and its allied products

JOHNS-MANVILLE

Serves in

Conservation

Hot Insulations, High  
Temperature Concretes,  
Asbestos Roofings,  
Packings, Brake  
Linings, Fire  
Prevention Products

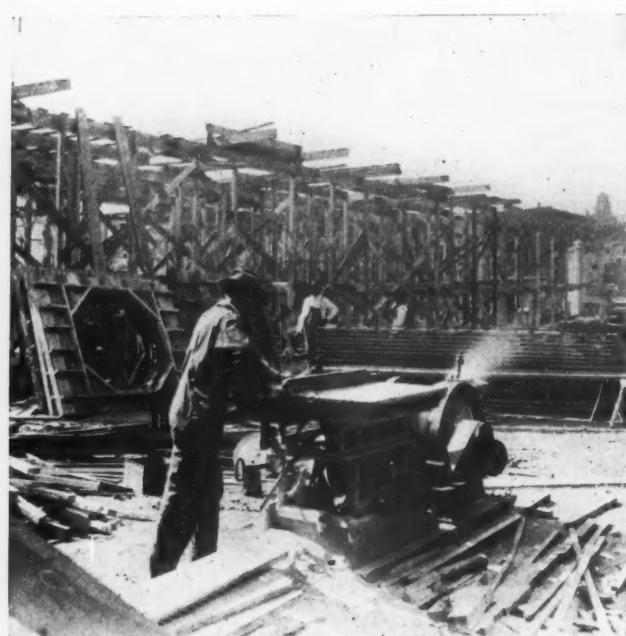
**JOHNS MANVILLE**  
Transite Asbestos Shingles

## Power on the Job Earns a Profit

BUILDERS LEARN UTILITY OF CONCRETE MIXERS AND POWER SAW RIGS

**A**S the demand for concrete foundations for buildings of all sorts began to grow several years ago, contractors and builders found that one of the most important pieces of equipment they could own was a concrete mixer. There are few buildings now constructed on any other type of foundation and the mixer is just as essential on the building job as a hammer or a saw.

Also it was the concrete mixer that was the founda-



A Combination Swing Cut-off and Ripping Machine Working Up Heavy Lumber for the Forms for This Large Concrete Building.

tion of the success of many men who were journeymen carpenters, but now have extensive contracting businesses. And as the contractor found that the mixer would build the foundation on the job more quickly and more economically than the concrete could

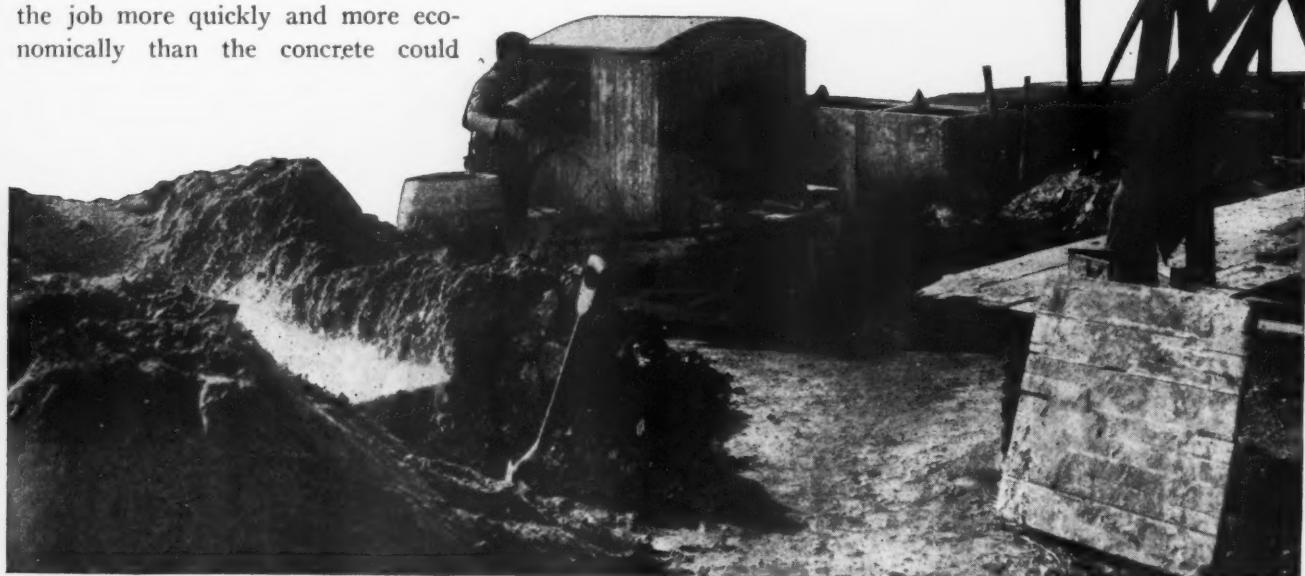
be mixed by hand, so he found that other pieces of portable equipment, such as the power saw rig and the hoist, are equally valuable to him.

There is an immense amount of building now under construction and contracted for this year. As the season progresses reports say that the building permits are rapidly increasing. But the successful builder during this year of high costs of both materials and labor will be the builder who can do the work economically. He must absorb some of the excess cost thru being equipped to save every possible dollar and must use the methods that will permit him to give his client the utmost in satisfaction at the least cost.

The many uses of the concrete mixer, both large and small, have made this piece of equipment a necessity on the building job. The mixer will turn out the materials for the foundation and the floor; the engine that drives it will operate the hoist and as the job is near its finish the mixer will mix the mortar for the plasterers. There are few buildings on which the mixer does not play an important part.

This is equally true of the portable saw rig that can be taken right out on the job and is available for the carpenters. Recently a well-known carpenter and builder in the east, in telling about building a good-sized Dutch colonial house he completed in a month, declared that the saw rig was equal to two extra men on the job.

Accompanying this article are a number of illustra-



The Old Method of Mixing Mortar Has Been Superseded by the Power Mixer. It Does the Work Well and More Quickly Than It Can Be Done by Hand.

# Real Panels of Lumber Without the Knots and Cracks

You can't expect Beaver Board results unless this trademark is on the back of the board you buy.



Handling a panel of Beaver Board, sawing it or nailing it will quickly convince you of its sturdy and lasting qualities.

If you could see the process of making this staple building material, you would realize more than ever that Beaver Board is lumber, nothing but lumber.

You would have to go back to the spruce forests of Northern Canada, the source of Beaver Board supply. There the logs are cut and shipped to the mills where the strong, pure fibres are built up into big panels of Beaver Board.

Each piece is then treated with the patented *Sealtite* process to prevent warping and to give it the ideal painting and decorating surface that has added so much to the reputation of Beaver Board.

There is a Beaver Board Dealer in your locality who will gladly give you samples of this staple building material.

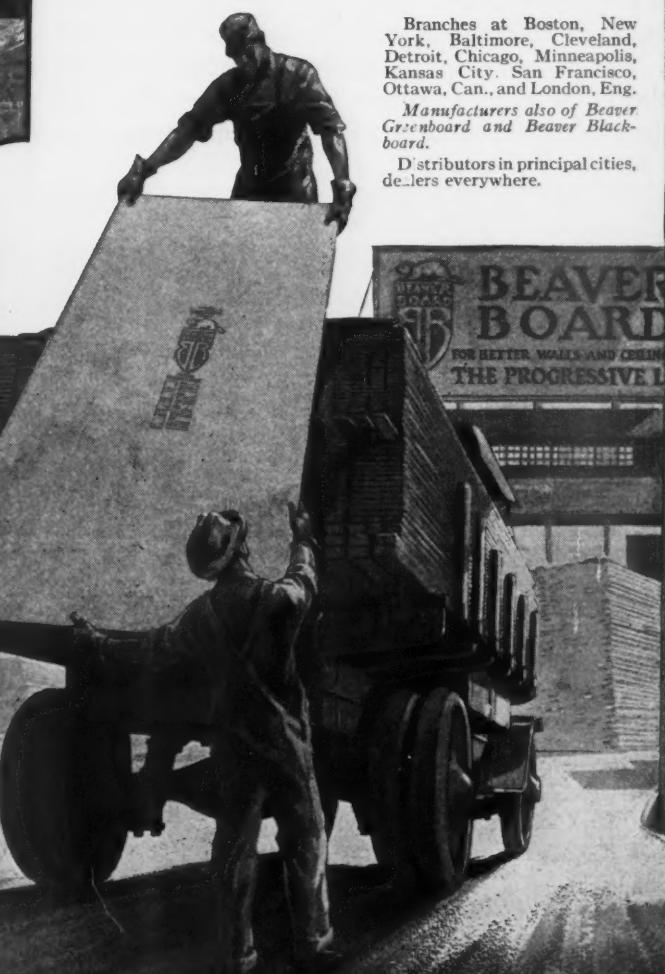
**THE BEAVER BOARD COMPANIES**  
61 Beaver Road

Buffalo, N. Y.

Branches at Boston, New York, Baltimore, Cleveland, Detroit, Chicago, Minneapolis, Kansas City, San Francisco, Ottawa, Can., and London, Eng.

Manufacturers also of Beaver Greenboard and Beaver Blackboard.

Distributors in principal cities, dealers everywhere.



# BEAVER BOARD

FOR BETTER WALLS & CEILINGS

tions made from photographs of concrete mixers and saw rigs in operation on the job. The mixers shown are both large and small, ranging from the one-bag mixer to those loaded by power. Being mobile they are placed so as to deliver the mixture right where it is needed, a great saving in handling, which means that the labor costs on the building were a great deal less.

One of the illustrations shows in operation a small mixer owned by Hanson Bros., South Chicago, Ill. Hanson Bros. own three mixers of this type, and keep them busy continuously. They recently purchased three more and will have them on the job during this great era of building.

It is an interesting fact that these two men were and are in the coal and building material business. They early saw the possibilities of the mixer and purchased one only as a means of selling more cement and materials. How profitable their venture was is shown by their additional purchases of mixers.

This is only an instance—it could be multiplied so many times.

Building cheaply does not mean erecting a cheap building. But it does mean using good materials and putting them in place as economically as possible. To do this the successful contractors are using equipment



**A Small Mixer Is Mighty Useful to the Country Contractor.**  
Here Is L. Ebaugh and His Crew Laying the Floor After the Concrete Foundation of a Country Home, Near Clear Lake, Iowa, Had Been Put in.

wherever it is possible and where it will save money. In this way the contractors are erecting buildings cheaply, but well.

Old methods of construction have been forced to give way to the modern efficient ways, because the latter are money savers. Wherever any quantity of concrete is used on a building it is not economical to mix it on a board. The mixer does many times the work a man can do and keeps the materials flowing into



**There Is Much Work for the Concrete Mixer Around a Good-Sized Fireproof Garage Building. Here Is the One C. W. Williams Used in Building This Garage at Kansas City, Mo. The Building Is Finished and Now the Concrete Floor Is Being Laid. This Is a Fine Type of the Modern Public Garage.**



The greatest contribution Lumbermen and Contractors can make toward the comfort and convenience of their customers' homes is "BILT-WELL" MILL

WORK. Each Lumberman and Contractor who avails himself of "BILT-WELL" plan service is serving the home builder and himself—they mean so much in assuring comfort, convenience, and permanent satisfaction.

## BILT WELL MILL WORK

**MAKES HOMES OF COMFORT,  
BEAUTY AND SATISFACTION**

most exacting requirements.

If you are not already selling "BILT-WELL" millwork and haven't taken advantage of "BILT-WELL" plan service, your inquiry will be given immediate attention.

*Write to the Nearest "BILT-WELL" Millwork Distributor Listed Below*

Adams & Kelly Co., Omaha, Neb.

Adams-Rogers Co., Indianapolis, Ind.

Carr & Johnston Co., Peoria, Ill.

Carr & Baal Co., Des Moines, Iowa.

Collier-Adams Mfg. Co., St. Joseph, Mo.

Carr, Ryder & Adams Co., Dubuque, Ia.

Carr-Cullen Co., Minneapolis, Minn.

Carr-Trombley Mfg. Co., St. Louis, Mo.

Collier-Barnett Co., Toledo, Ohio.



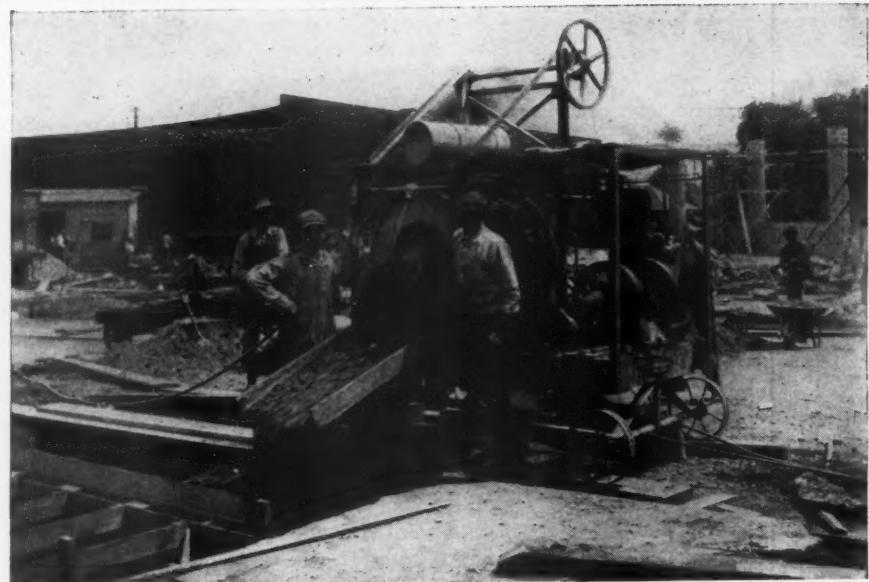
the job. There is the additional advantage that the more quickly a concreting job is finished the better the job will be.

The portable saw rig proved its worth on the many government building jobs that were finished during the war. Cantonments that housed thousands of men rose on barren ground within a few days. And the portable saw rig was one of the reasons why the contractors were able to do the work so quickly. They supplied the carpenters with the means of doing the necessary sawing right on the job. Portable jointers and band saws also were used. There is record of a large frame hospital being erected in a day. The concrete mixer furnished the materials for the foundation. When it had set the carpenters and electricians and plumbers went on the job and at night the building was finished and the lights burning and the water running.

Similar records were made in the government construction work in France, where the Americans accomplished what seemed to the foreigners impossibilities. They did this because they had the equipment.

These, of course, were big jobs—jobs that the average builder does not often get. However, the machines used were large and numerous. But the point is that equipment made it possible to do these jobs quickly and economically and undoubtedly better than if the same work had been done by hand.

Here Is a Little Mixer on a Big Job. Hanson Bros., South Chicago, Ill., Own This Equipment and Do an Extensive Concrete Contracting Business. The Small Mixer Is Easily Placed so that It Delivers the Materials Where They Are Needed, Saving Handling Costs.



Practically every piece of equipment the builder needs for a job is made in a size that it will pay the contractor to use. There is the small, one-bag mixer, that is easily moved from job to job and which does not tie up much capital, as the cost is low. There also are small rip and cross-cut saw rigs that are readily transported. Small engines that are set on the same frame with the saw table furnish the power for these machines.

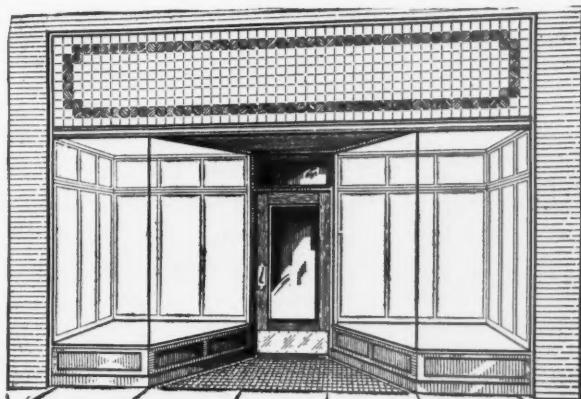
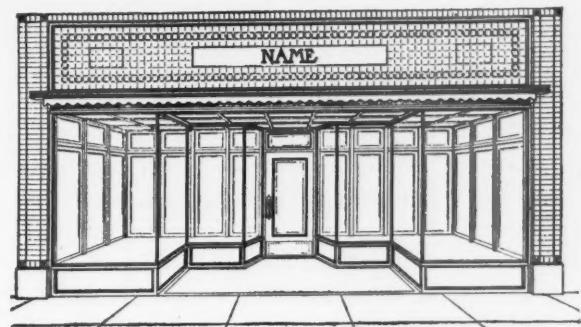
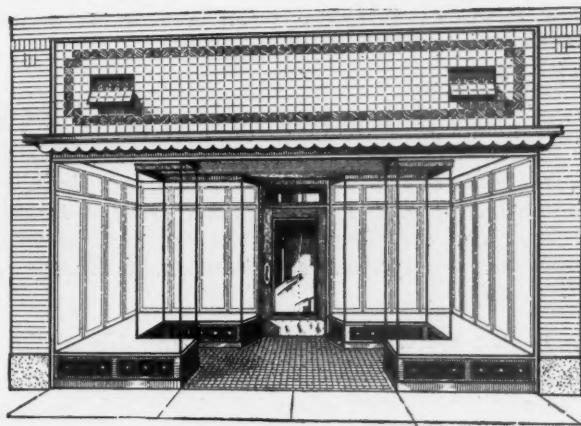
One great time and labor saving feature of the small mixer on the building job is that it pours the concrete right into the forms. This eliminates double handling of the materials—once when they are put into the drum and once after the mixture is ready to be put in place.

Having the proper equipment has helped many carpenters to success as contractors. They have been able to handle all the work themselves, without depending on subcontractors, thus dividing their profits on the building.

During the building boom that is now on, there will be work for everyone, more in fact than some contractors are able to handle, unless they are equipped to do the work. There is no time like the present to get that equipment, for no man can work without the proper tools. Neither can the contractor give his clients the best building their money can buy unless he is able to do the work in the least costly way.



Taking the Saw Rig to the Building Job Is a Money and Time Saving Method. The Short Pieces of Timber Shown Here Will Be Used, as Each Can Be Quickly Cut to the Right Size for Blocking, Furring and Bridging. There Is No Waste Lumber on the Job Where a Saw Rig Is Used.



## Let Kawneer Store Fronts Help Build Your Reputation

Contractors everywhere are making good profit on store front construction work.

Those who are installing Kawneer Store Fronts—the original, all metal, resilient grip construction—are able to point with pride to their work. Every job pulls others.

## Kawneer STORE FRONTS

More than 70,000 Kawneer Fronts in all parts of the country. The best looking fronts in your town likely are Kawneer construction.

Why not investigate this profitable business? Any contractor who can build a house or a store building can make money installing Kawneer Store Fronts. Fill out the coupon at once and make a start on this profitable business.

### Send for this Book of Designs

Every builder should have a copy of this valuable book for his files.

### Write Us About Your Prospects

If you know of any store front prospects, write us and let us help you close them.

## Kawneer Mfg. Co.

1526 Front Street  
NILES, MICHIGAN

SEND IN THIS COUPON TODAY  
Kawneer  
Mfg. Co.  
1526 Front Street  
Niles, Mich.  
Please send me your new  
Book of Designs.

Name.....

Address.....

## Easy Now to Sell Electric Light Plants to Farmers

ATTITUDE TOWARD MODERN IMPROVEMENTS HAS CHANGED THRU FAMILIARITY WITH AUTOMOBILES—100,000 LIGHT PLANTS NOW IN USE, WHILE THERE IS A MARKET FOR 3,000,000.

By E. J. Edwards, E. E.

*Editor's Note—The popularity of individual electric light plants is growing rapidly. Thru them those who live where central station current is not available can have one of the greatest of modern conveniences. No one is in a better position to sell and install electric light plants than the contractor who erects farm buildings. In doing so, however, the contractor should have some knowledge of electric light plants from a technical standpoint. In this article Mr. Edwards tells how the rural home and the farm buildings can best be served. While the technical side of farm lighting is touched on, it is done in a simple and educational way. Every contractor will do well to read and study this article.—THE EDITOR.*

THE feasibility of extending the advantages of electric service beyond the reach of the Central Station lines has been recognized for some years, ever since the tungsten filament lamp became a commercial reality. Long before that the small individual plant was a possibility, but on account of the large quantity of energy necessary to supply lighting at that time the cost of generating and storing was too high to allow of any considerable development of the business. It is not the high efficiency lamp alone, however, that has brought the modern electric lighting plant to the farm. The attitude of mind of the farmer has considerably changed during the past ten years, and he has prospered in his business and is able now to buy the things he wants. If any one group of people has more completely adopted the automobile than any other, it is the farmer. This fact indicates that he no longer avoids buying something useful because of a fear of its complication of mechanism. The fact that he has been able to keep an automobile running has naturally given him confidence in the simpler mechan-

ism of the electric lighting plant and his ability to operate it. The present importance of farm lighting, therefore, is the result of engineering development and of changed conditions which happen to be favorable.

### Light Plants Now Legitimate Farm Investments

Farming has come to be considered a business worthy of the best business methods and expenditures for automobiles, farm lighting plants and the like are no longer looked upon as luxuries to be indulged in only when the ship comes in. Such things are now considered as legitimate investments in the farming business which will render a proper return on the money invested and the cost of operation and maintenance. At the present time there are, no doubt, considerably over 100,000 of these small lighting plants in use in this country, and these plants together with wiring and accessories represent an investment approaching \$100,000,000. If this field can be judged by another, the automobile, which seems quite parallel, there exists a potential market for around 3,000,000 plants, or an investment which runs into figures we scarcely even

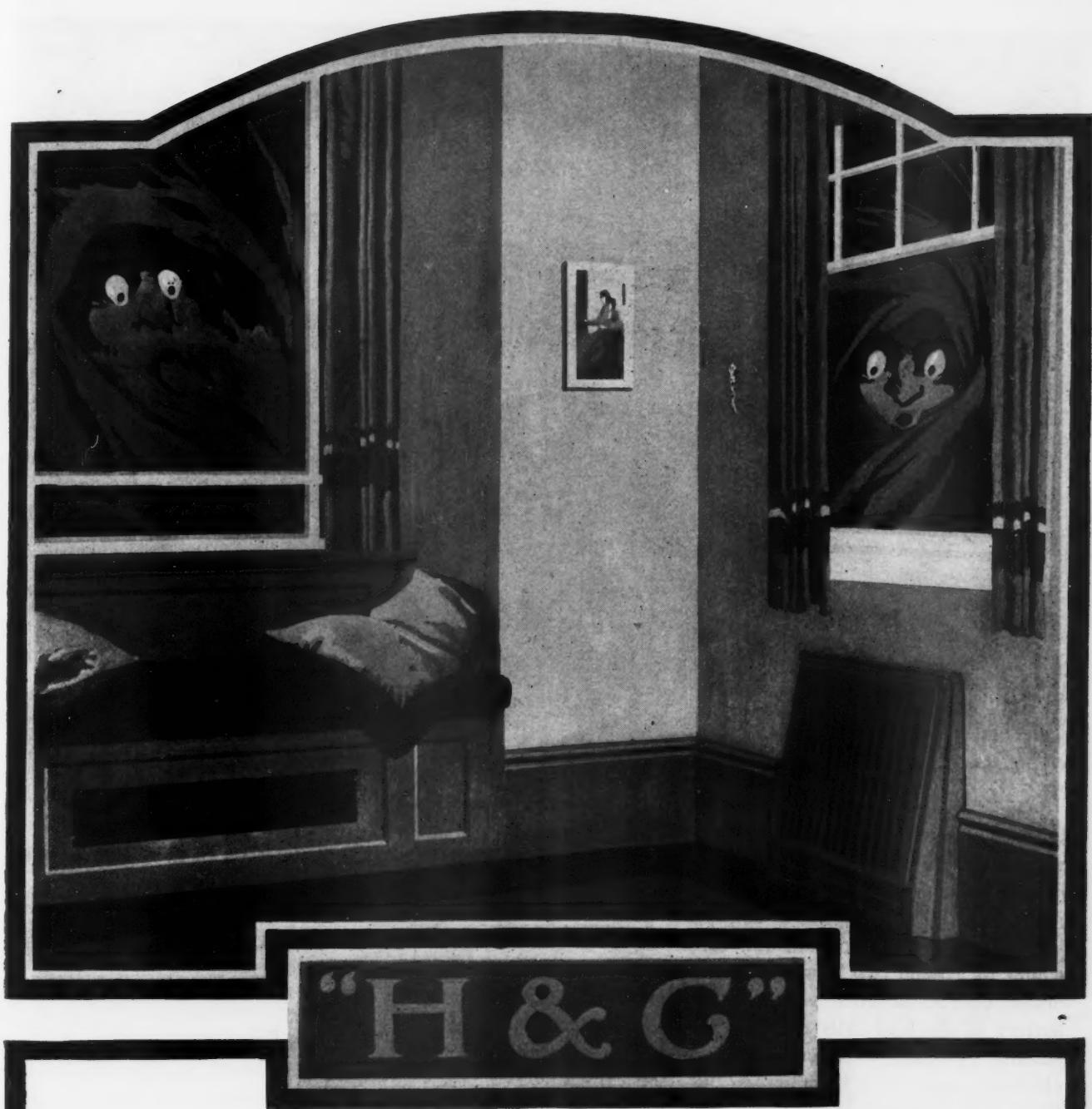
heard of before the time of the great world conflict. Iowa probably has made the greatest progress of any state and has somewhere between 5,000 and 10,000 installations. Iowa has about 60,000 square miles of area, practically all production, and two installations per square mile or 120,000 installations in the state, does not seem to me to be an unreasonable estimate of the possibilities. It is not hard to see that the farm electrical business is going to be a big proportion of the total done in Iowa.

### Efficient as Small Power Plants

In this field, as in all others, there have been hindrances to progress like differences of engineering opinion. Fortunately the lack of uniformity in the fundamentals of design has not persisted and already a fair degree of standardization has been accomplished.



An Electric Light Plant Brings the Greatest of City Conveniences to All the Farm Buildings.



## THE FROSTY FURIES OF WINTER CAN NEVER ENTER WHERE "H. & C." REGISTERS ARE USED!

And so it should be wherever warm air is used for heating. We, "The Hart and Cooley Company," manufacture a complete line of Registers, Grilles, Cold Air Intakes, Steel Asylum or Lock Registers, Ventilators, Furnace Regulators, etc. We believe our products are the best; because of the finely rounded fret work of the register face, which adds both strength and beauty; the heavy braces in the register box, reinforcing the

face, which affords strength much in excess of any possible requirements; the capacity for the free flow of warm air which reaches the maximum in these registers.

Our entire line embodies those correct principles and features—strength, durability of finish, air capacity, simplicity of construction, effectiveness of design, that make it the builders' choice in every field.

### OUR BEAUTIFUL NEW CATALOG "A"

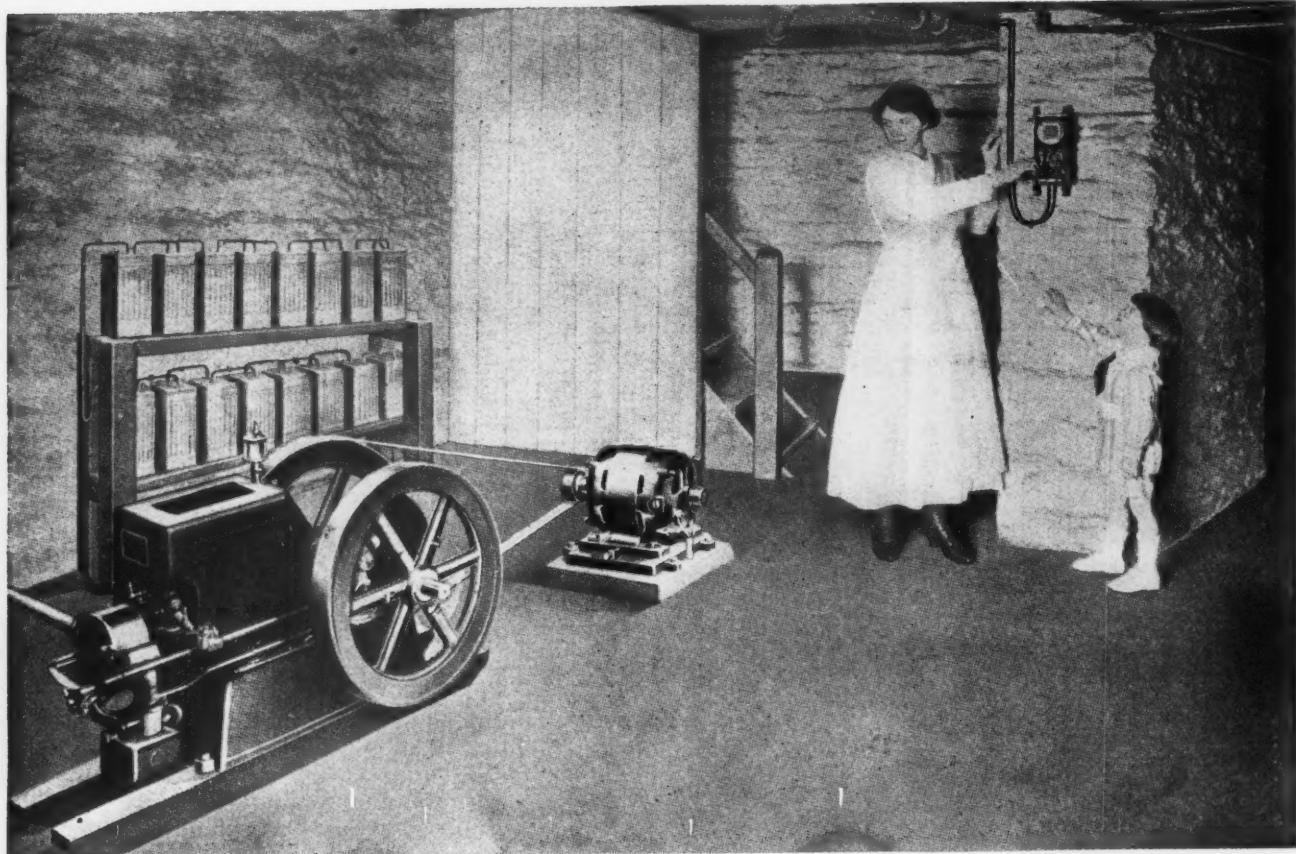
has been carefully compiled for the benefit of contractors and builders. It not only illustrates, describes, and gives the prices of our products, but contains a complete set of practical heating data and tables that will render you wonderful service in calculating difficult estimates. Write for it today!

**THE HART & COOLEY COMPANY, 637 Corbin Ave., New Britain, Conn.**

BRANCH OFFICES AND WAREHOUSES:

100 Lafayette Street, New York

73 East Lake Street, Chicago



**The Operation of the Engine and Generator of an Individual Electric Light Plant Is Simple. The Housewife Merely Closes the Switch and Has Light and Power in Her Home.**

It has become generally recognized that it is impracticable to attempt to cover all the power requirements as well as the lighting, and the plants are designed primarily for the lighting and the smaller power work. Best engineering calls for a unit plant permanently installed in a fixed position and consisting of a gas engine of around two horsepower connected to a generator of 750 or 1000 watts rating, and a storage battery of 16 lead cells or 24 nickel iron cells and suitable switching and control apparatus. In all its electrical essentials it is similar to the electrical equipment of the automobile, but is not hampered by limited space and does not have to be made to withstand road shocks and dirt.

The average farm place needs around 15 k.w. hours per month for lighting. A 30-volt, 80-ampere hour battery is capable of storing nearly 2½-kilowatt hours, which, according to the above figures, is a several days' supply. Such a battery is not prohibitively expensive to buy or overly burdensome to care for, and it is possible to properly charge it with a plant capacity of a half a kilowatt.

It might have been concluded from the fact that all the elements of the small electric plant, engines, generators, batteries and switching apparatus were already at hand at the time of the appearance of the tungsten filament lamp, that this new field would have developed immediately and spontaneously. There was, however, further development to be done on each of the

component parts and many general and engineering features to be determined. The size of units, voltage of operation, detailed method of control, standards to follow in installation, and proper instructions as to care and maintenance were all things which had to be determined, and the progress of electric lighting for the farm has depended, and will depend more than anything else on how well this engineering is done.

#### What the Requirements Are

One of the most important engineering points for decision was the voltage. The standard 115 volts of the central station offered many advantages, such as ease of transmission and the availability of 115-volt lamps and other devices. It has the disadvantage of high investment in storage batteries and tedious work in their proper maintenance. These disadvantages were too formidable to accept, and a compromise is evidenced by the fact that there are few engineers now who claim that a lower or higher voltage would have been better. Many individual cases, no doubt, seem to call for lower or higher voltages, but with the present day recognition of the value of exact standardization, the average must determine the selection for the large production plant. A storage battery of 16 lead cells gives an open circuit voltage of 32 volts throughout its normal period of discharge. When delivering current at values within its proper rating the

(Continued to page 106.)



## Scientific tests prove **UPSON-BOARD** nearly twice as strong



"Whenever you see a board with a colored center think of the creator Upson PROCESSED Board, with its blue center."

"Imitators lacking originality are now seeking to approximate the appearance and construction of dependable Upson Board."

STRENGTH in wall board is vitally important to you—because—a stiff, hard, STRONG board eliminates waste in cutting, fitting and handling—is easier and quicker to apply—and will not pull from the nails like soft, spongy boards.

Upson Board is stronger because it is made of chemically treated wood fibre and long, wiry, high-grade ground wood fibre.

Some boards are made entirely of pulp screenings or cheap, coarse ground wood full of natural rosin. Then to temporarily stiffen the board, MORE rosin is added. And excess rosin causes quick deterioration! That is why some boards get punky.

Upson Board is harder and stiffer—it is laminated under great pressure to make a compact board that "looks, feels and works like lumber."

Any stock panel of Upson Board should test more than 350 pounds to the square inch on the Mullen Tester. This is the official apparatus used by the Government and all experts to test pulp products.

Most pulp boards test but 220 to 240 pounds to the square inch. Upson Board is therefore nearly twice as strong.

When you cover walls and ceilings with BLUE-center Upson PROCESSED Board you not only protect yourself against dissatisfaction, but you build a monument to your reputation that will stand as long as you are in business. Can you afford to risk your reputation with inferior imitations of Upson?

Send for a sample today and test it beside any other board you may know. Then you will realize why Upson Board has established a record of less than one complaint for every three million feet sold and used.

THE UPSON COMPANY, LOCKPORT, N.Y.  
*Better than plaster for walls and ceilings*

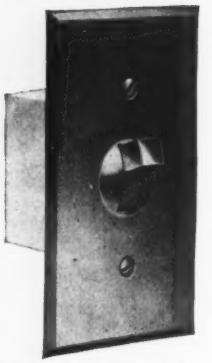
# UPSON BOARD

THE DEPENDABLE BOARD WITH THE FAMOUS BLUE CENTER

## How a good wiring job benefits the general contractor



Flush Type with  
Metal Covered Button



Flush Type with  
Composition Button



Pony Type  
Surface Switch



Medium Sized  
Surface Switch

ELECTRIC WIRING is of great importance to the occupants of a building—its convenience, or the lack of it, will be quickly noticed and will reflect credit or discredit on the whole job. A good wiring job by a first class electrical contractor will surely enhance the reputation of the general contractor.

It pays, therefore, to give attention to details of the wiring plan. Here is a convenience that will be appreciated.

### G-E Tumbler Switches

Are a popular, easily operated switch for turning lights on and off in any kind of building. It is operated by moving a single button—a light touch is enough and the action is positive and dependable.

G-E Tumbler switches can be operated also when the hands are otherwise occupied as a sweep of the arm or touch of the elbow is sufficient.

It pays to use the most convenient and up-to-date wiring features.

### G-E Reliable Wiring Devices

Can be furnished by any reputable electrical contractor

**General Electric**  
General Office      Schenectady, N.Y.  
Company

41-45

# G-E VENTILATING FANS

*Hotels  
Need  
Them*

*Big Kitchens  
Should  
Have Them*

*Theatres  
and Halls  
Must Have  
Them*

*Mills and  
Factories  
Can't Do  
Without Them*

*Hospitals  
Demand  
Them*

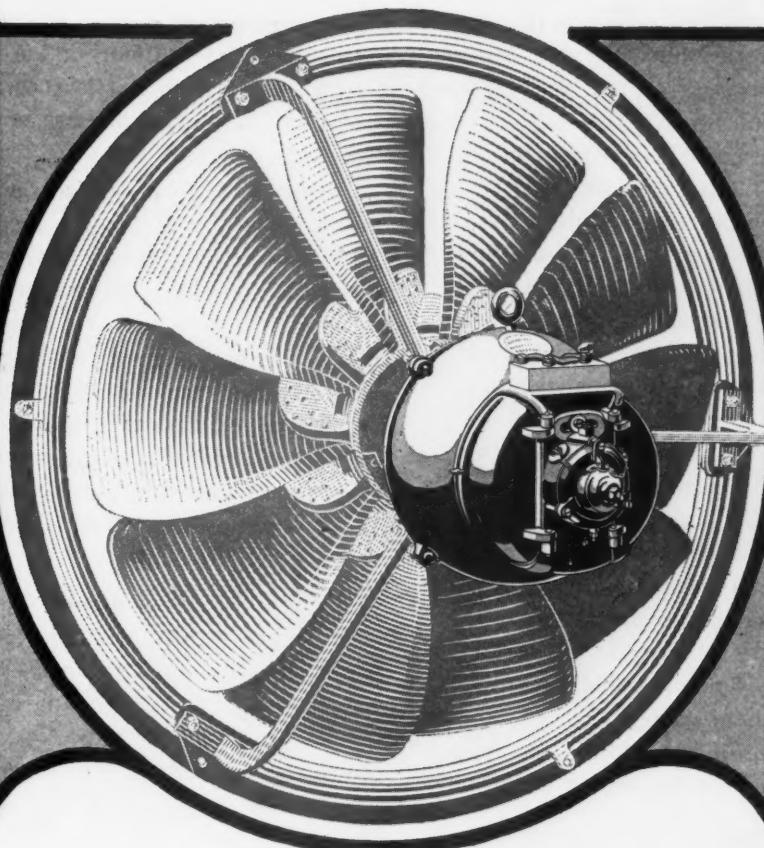
*In Laboratories  
They are  
Necessary*

*Restaurants  
Swear  
By Them*

*In Laundries  
They are  
Indispensable*

*Big Offices  
Should be  
Equipped*

*In Dormitories  
They are  
Essential*



G-E Ventilating Fans are self-contained, readily installed in wall, window or ceiling, easy to control and deliver maximum volume of air with minimum expenditure of power.

We furnish a wide variety of outfits for all classes of service. Fan sizes from 10 to 48 inches.

Our nearest office or G-E Motor Agency will supply detailed information upon request.

45-43

**General Electric**  
General Office  
Schenectady, N.Y.



Sales Offices in all  
large cities

© 1945 GENERAL ELECTRIC

(Continued from page 102.)

terminal voltage will range between 30 and 32. In these installations it is entirely feasible to hold the maximum drop in the wiring to two volts. It will be seen, therefore, that the switchboard voltage will range between 30 and 32, and the socket voltage between 28 and 32, depending on the condition of charge of the battery and the rate at which current is being drawn. The nominal voltage is, therefore, usually given as 30, and the incandescent lamps are rated 26-32, meaning that they are designed to operate on these systems, which by their nature may be expected to supply voltage varying within these limits. In this respect we have another similarity to the case of the automobile, where the lamps are rated 6-8 volts for three lead cell generator systems. Standardization of 30 volts for farm lighting has already resulted in availability of standard product lamps in sizes ranging from 5 to 100 watts, as well as practically all other household appliances, such as irons, washing machines, vacuum cleaners, cream separators and power pumps for pumping running water to the house and out buildings, stock watering troughs, etc.

It must be admitted that the standards of voltage regulation are based entirely on the performance which can be obtained from the lead battery. With the other type of battery it is not possible to meet this standard, at least not without using extra cells and an automatic auxiliary device of some kind. It is sometimes claimed unnecessary to provide a plant on a

farm which will give a voltage regulation as close as holding between 28 and 32 volts. In this connection it may be interesting to note the relation between candlepower and voltage as applied to the Mazda lamp. A lamp which gives 100 per cent light at 30 volts will give 78 per cent at 28 and 61 per cent at 26 volts. The best regulation is none too good, provided that it can be obtained without undue cost and the limits given above represent at least the writer's conclusion as to the best compromise between the two opposing factors.

It is desirable to recognize the proper field for the farm lighting plant. These plants are usually referred to as lighting and power plants, and sometimes as power and lighting plants. They are primarily lighting plants, because they can only be justified on that basis. It is not good engineering to handle the heavy power work of the farm by means of electric motors supplied by generating equipment located on the premises. These plants are most useful for lighting, but are used incidentally for small power work where the consumption of any single motor is a small fraction of output of the plant.

#### Convenience vs. Cost

It is often claimed that the farm lighting plant can compete with central station service. It seems clear that the small lighting plant cannot be expected to compete in price with good central station service where the connections can be made without unusual transmission costs, yet the small plant manufacturer often gives the impression that his plant will supply lighting for less money, and in showing his figures he neglects to mention a few such items as interest and depreciation and battery renewal costs. It does not, however, seem necessary to compare costs because undoubtedly the convenience of electric lighting is worth considerably more than the central station has to get for it and it is entirely proper that the user of the farm lighting plant should recognize that because of his particular location it is necessary for him to pay more for a valuable service than somebody else who is more favorably located. If the small plant salesman is to use comparative costs in his selling arguments he should take into account all the items of cost.

There should be a high standard of installation. Good engineering calls for a solid foundation for the machinery and that the batteries be located in a clean place which can be well lighted at times of inspection.

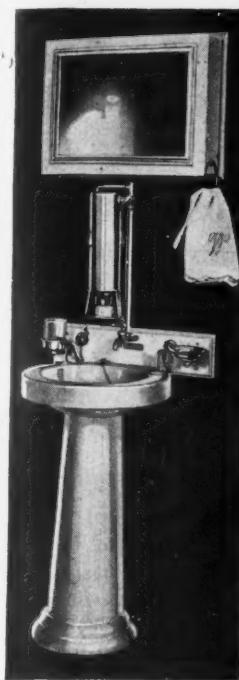
Probably the most important feature of installation is the wiring. Unless the wiring plans have received some attention there is very little chance of avoiding excessive voltage drops in some circuits.

#### Proper Fixtures Make for Satisfaction

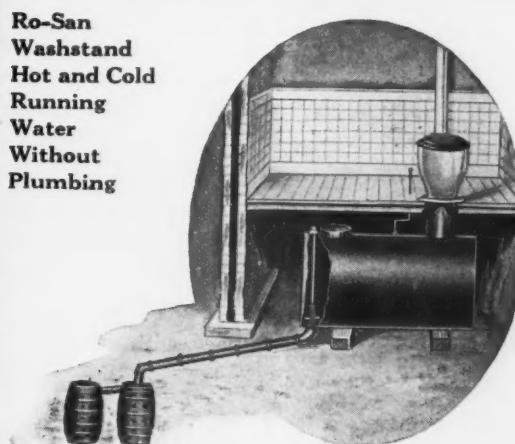
A feature of installation of first importance is the application of good illuminating engineering to the



The Power From the Electric Light Plant Operates the Mechanical Milker, Which Makes the Handling of the Milk Quick and Sanitary.



Ro-San  
Washstand  
Hot and Cold  
Running  
Water  
Without  
Plumbing



This Ro-San Closet  
for Homes without  
Plumbing—Portable  
—set it up anywhere  
in the house

This Large Closet for Homes in small towns and on Farms, Schools, Summer Cottages, Churches, Stores, Factories, without Plumbing

AGENTS

"BIG FOUR LINE"  
Ro-San  
BATH ROOM SPECIALTIES

Now is the Time  
to Make Money on  
this Quick-Selling Line

Make an extra profit on every building job by selling the owner and installing for him Ro-San Bath Room Specialties—fixtures he already knows about and would like to have.

Our advertising this year will be greater than ever—it is right now reaching your customers—the people who will build or order alterations. You can reap the benefit. We are the largest manufacturers in this line—you can deal direct with headquarters—get quick shipments. We have the goods on hand.

New laws make our line of sanitary specialties requiring no plumbing a gold mine for agents. The opportunities to make money are tremendous. The name Ro-San stands for quality, satisfaction and square deal in thousands of farm and small town homes. Write today to headquarters for liberal proposition and terms.

THE ROWE SANITARY MFG. CO.  
906 6th Street, Detroit, Mich.

The  
Rolling  
Tub  
Closed  
Occupies  
Only  
3 Square  
Feet

30  
DAYS  
TRIAL

Below is our New  
Rolling Tub with  
Heater—No  
Plumbing needed  
—A Tremendous  
Hit Everywhere



location of the outlets and the choice of fixtures and glassware. It is a mistake to assume that the farmer will be permanently satisfied with drop cords and key sockets, even tho at first he might seem to be. The cheap installation is not good engineering and it is not good business. The farmer will have lasting satisfaction only in an installation fully up to city standards. Unless he is given convenient switches and extra baseboard outlets he cannot enjoy all the benefits which are inherent in electric lighting, and it costs little more as a percentage of the total to do the job right.

Fixtures and glassware are important considerations. The fixtures can be very simple and yet well suited to their work. There should be glassware in the house fixtures and it should be such as to accomplish the elimination of glare and the redistribution of light. The farmer in his experience with coal oil lamps may not recognize the undesirability of having bright sources in the ordinary angles of vision. He may even be inclined to judge the value of a light source by its brightness rather than by the resulting illumination on the objects he desires to see. Nevertheless, if glare in the installation is avoided by proper equipment, he will not be long in recognizing the effectiveness of his investment. There may be places in the outbuildings of the farm where bare lamps are not particularly objectionable, but certainly in the main

rooms of the house reflectors should be provided.

No argument is necessary to establish the necessity of applying good methods to the farm lighting business. The better the methods and the more effectively applied, the greater will be the success of those engaged in the business and the satisfaction of the user. The manufacturers' and dealers' part, it seems to me, is to be willing to take common counsel with others interested, and then to seriously strive thru the medium of instruction books and direct selling connections in the field to keep the business going along in accordance with the best established uniform practice.

#### Estimating Paint Requirements

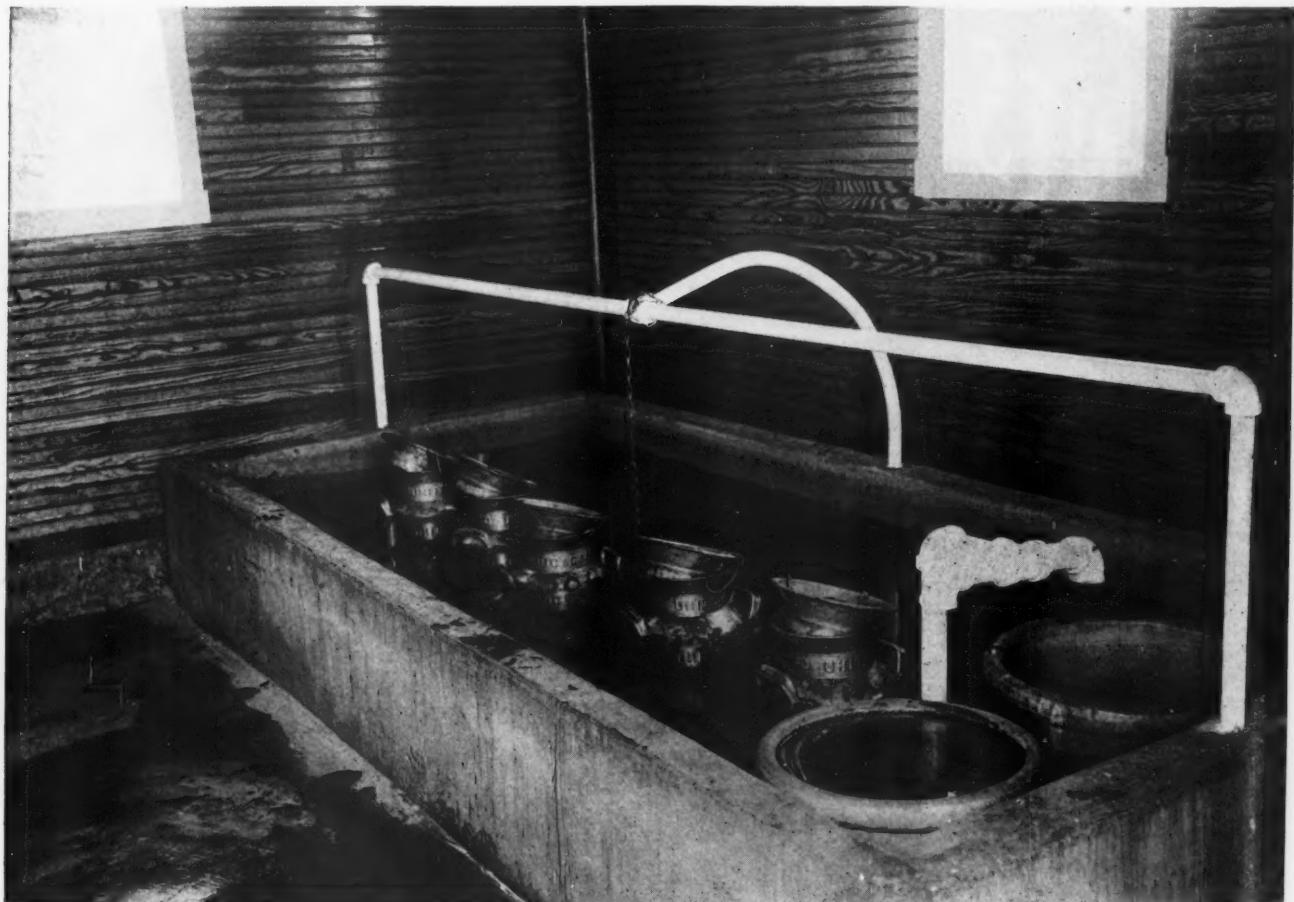
In estimating the amount of paint required for the home, the property owner is sometimes at a loss as to just the number of gallons required.

While the quantity of paint required varies somewhat with the nature of the surface to be covered, and the conditions under which it is applied, yet the following method of measurement will serve as an accurate guide:

A good grade of prepared paint will cover at least 350 square feet to the gallon, two coats.

First, measure the distance around the house and multiply by the average height; then divide by 350 and the result will be approximately the number of gallons to buy. Of this quantity one-fifth will represent the paint required for trimmings, cornices, etc.

For blinds or shutters of average size you will require one gallon of paint to each 12 pairs of blinds, two coats.



Besides Lighting the Home, the Barn and the Milk House, an Electric Light Plant Furnishes the Power to Pump the Water Into the Cooling Tank.



## BUILDING! BUILDING!

EVERYWHERE throughout the entire country the building industry is booming as never before. Concrete buildings—Frame buildings—Brick buildings are going up by the thousands, in the cities, suburbs, and far into the country. And in all this activity you find

# Jaeger Mixers

playing a most vital part.

Look around! Almost every contractor you know owns and operates one or more JAEGER Mixers. And there is a big reason back of all this. Jaeger Mixers are the most practical for any and all jobs—from the small sidewalk or foundation job to the largest bridge or building they produce, turning out a high-grade mix, swiftly and ever dependable.

They speed up the work, reduce the payroll and make possible a greater profit for the Contractor on each job, large or small.

They are made in a variety of sizes to suit the needs of all Contractors and Builders.

We have many more **good** things of vital interest to you that we want to tell you about Jaeger Mixers. Write us today. We can make you money.

**JAEGER MACHINE COMPANY**  
521 Dublin Avenue, Columbus, Ohio

## "Get 'Em Envious and You've Got 'Em"

A MODERN FARMER GIVES BUILDING CONTRACTORS AND HARDWARE AND MATERIAL DEALERS A TIP ON HOW TO PROMOTE BUSINESS.

A FARMER stopped his new automobile in front of the hardware store, set the brakes, climbed out and, with an admiring glance at the car, entered the store.

"Fred," he said to the hardware man, "I want a set of the best door hangers you've got in the place. Something that I can put on my garage doors so's they'll open easily when I want to get my car out and in."

"There they are," said Fred, putting a box on the



"I Want the Best," He Said.

counter and opening it. "Those are the real things—ball bearings, with wheels enclosed, weather and bird-proof; in fact, the latest development in door hangers. You'll want a new track for them, too, won't you?"

"Sure, I want the best; can't afford to have anything else these days. How much is the outfit?"

He was told.

"Whew!" exclaimed the farmer. "I remember the time, and it was not so long ago, either, when I'd no more think of puttin' that much money into a labor-

savin' contraption than I would of cuttin' off my right hand. But times have changed. Then I was gettin' \$5 or \$6 a hundred for hogs, 60 cents for corn, and if I got \$1 a bushel for my wheat I thought I was lucky. But look what I'm gettin' now.

"At that, there's a lot of farmers that never give that a thought. They're mighty glad to get high prices for their crops and livestock, but they think they ought to buy everything they need at the old prices.

"Great times we're livin' in tho, ain't they?"

"They sure are," replied the hardware man, "but a lot of people don't appreciate them."

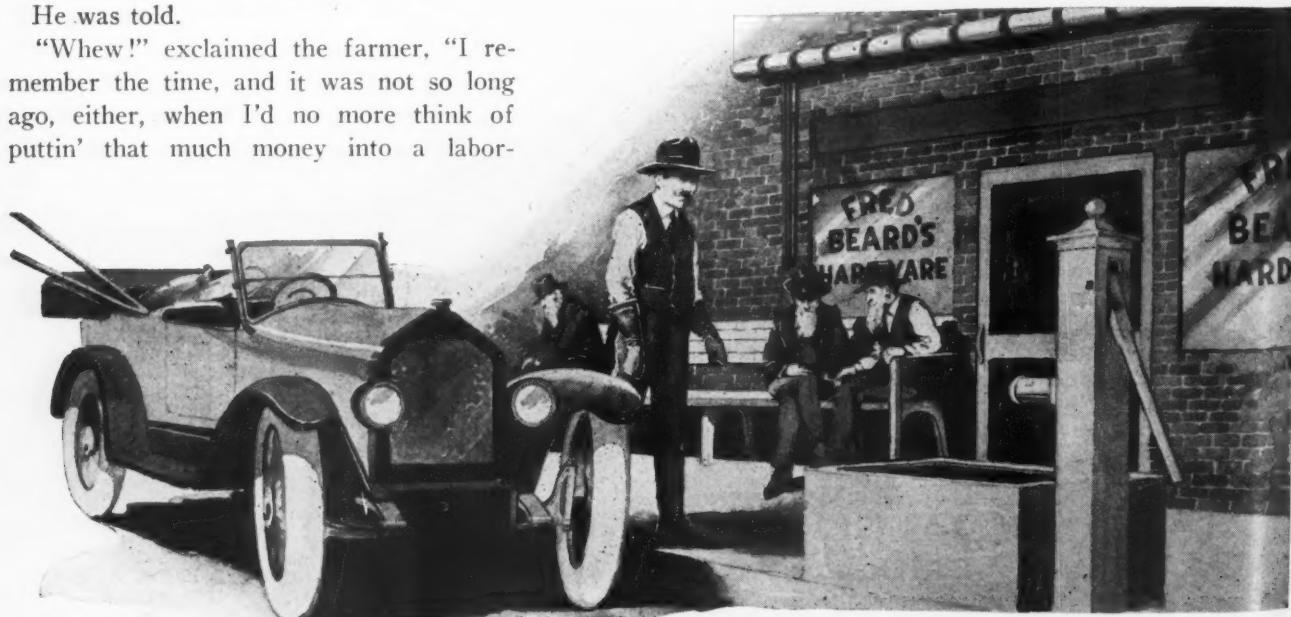
### The Farmers are Learning

"They will, they will," answered the farmer, "just give 'em time. They're too busy now makin' money, but they're also beginnin' to wake up to the fact that better equipped barns mean better and more productive cows; that crops are too valuable to be put into tumble-down, rat-infested cribs and granaries, and that labor isn't the cheapest thing about the farm and is worth savin'."

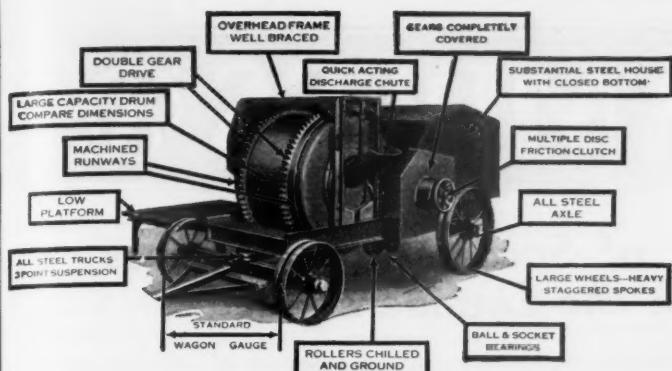
"What do you think I'd done during the war, when help was so scarce and high priced, if it hadn't o' been for my water system in the barn an' house; how do you suppose I'd got my plowin' done if it hadn't been for my tractor, and how do you suppose I'd done all my other work if it hadn't been for these labor-savin' devices that a lot of my neighbors look on as foolishness."

"They don't think so now, tho, after all the trouble they've had. They were just naturally jealous, that's

(Continued to page 152.)



The Farmer Stopped His Automobile at Fred Beard's Store, Got Out and Entered.



# DANDIE

## The Big Value Light Mixer

Send back the coupon at the bottom of this page—and get the full facts about the remarkable value of the light mixer field—the light mixer built first for **reliability**, and then built in **volume** to keep the price down.

No, sir, the Dandie is not the cheapest mixer—it is the first light mixer built as strong as a light mixer can be built. It stands up to all the work you can give it—is dependable to stick on the job without costly delays.

But the price is within the range of light mixer prices—that is why it is the **remarkable value**—you are surprised that you could get such construction for the price. It is only made possible by scientific design,

big production and standardization of every part. This is how we get the price down, not by skimping.

Get the Dandie Catalog—get the full details of how volume production has put new reliability into the lighter mixer field—see for yourself why the Dandie is the remarkable value of the industry.

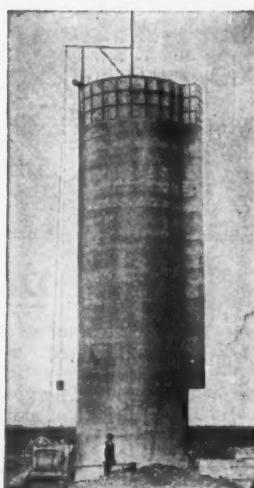
### Koehring Capacities

in cu. ft. wet batch rating  
 Pavers 12 cu. ft., 18 cu. ft., with or without loading crane to lift batch boxes from industrial cars. 8 cu. ft., without loading derrick.

Construction Mixers, 7, 10, 14, 21, 28 cu. ft.

Hot Mixers for bituminous work, 9, 14 cu. ft. side charging type; 18 cu. ft. paver type.

Gasoline, Steam and Electric Power



### SEND BACK THIS COUPON



KOEHRING MACHINE CO., Milwaukee, Wis.

Please send, without obligation, your Dandie Big Value Catalog K-5, and advise me where I can see a Dandie Mixer.

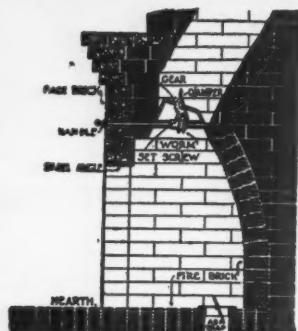
Also send me information on items marked X in   Bar Benders  Bar Cutters

Name \_\_\_\_\_

Address \_\_\_\_\_



# STOVER DAMPERS &



## *The Secret of Successful Fireplaces Lies in the Dampers Used*

WHETHER the fireplaces you build are to be a source of satisfaction to your customers and of credit to you, depends to a great extent on the damper.

Stover Dome Dampers are Simple in Construction, and easy to operate and install.

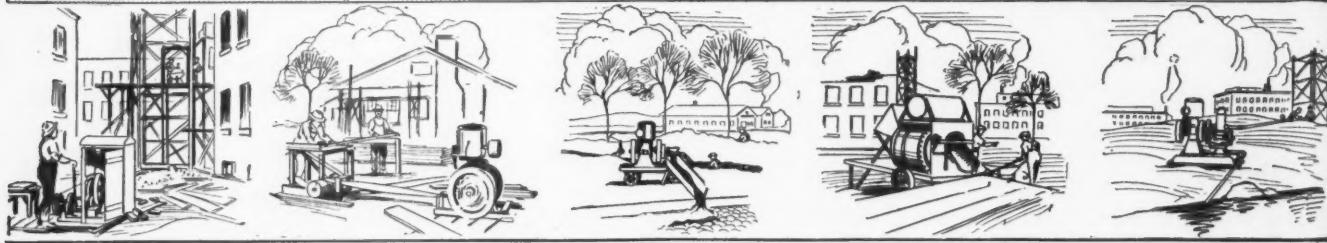
The time and labor saved you in forming the roof or throat of the chimney is alone worth the cost of the damper.

The diagram at the left shows our perfect system of draft control which affects a great saving in fuel by regulating the heat and forcing it out into the room. The screw gear and pivoted cover make an unfailing and easy method of control.

Stover dampers are made in different styles and sizes for fireplaces from 20 to 72 inches wide. They are fully illustrated and described in our Catalog No. 1954.

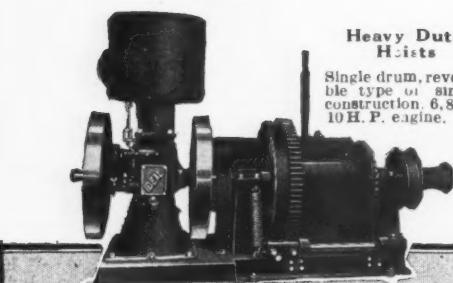
**Stover Mfg. & Engine Co.**  
734 East Street      FREEPORT, ILLINOIS

A Postal Brings Our Catalog



Force Pumping Outfit

2j., 4j., 6, 8 and 10  
H. P. c.p. city; 800  
to 7200 gallons per  
hour.



Heavy Duty  
Hoists

Single drum, reversible  
type or simple  
construction. 6,8 and  
10 H. P. engine.

## Dependable Power Equipment

The success and economy of power equipment used by contractors and builders can be judged only by the kind of service rendered under all conditions of work.

Ordinary equipment may stand up under ordinary service, but when the critical time arrives — when **extra power** and **extra strength** are needed for an emergency the "ordinary" kind of equipment will often times fail. Delays follow which are not only annoying but costly.

Experienced buyers avoid such diffi-

culties by choosing machinery and equipment that has proven itself in actual service.

Ideal Engines and Ideal outfits are the choice of contractors and builders because of their rugged construction and dependable power. They are built with **extra strength** that is so often needed in emergency.

The complete line of Ideal power equipment includes various types of hoists, pumping outfits, excavations and air compressors.

*Write us stating your needs and get the benefit of our experience  
in selecting the most suitable equipment*

**R. E. OLDS.**      **IDEAL ENGINE COMPANY**      630 E. Kalamazoo St.  
Chairman      LANSING, MICH.

Boston  
Chicago

New York  
Minneapolis

DISTRIBUTORS:  
Philadelphia  
Kansas City

Pittsburg  
Omaha

Cleveland  
Atlanta

**IDEAL POWER**



# Fire-place Fixtures

EVERY Builder should have at hand our catalog of Fire place Fixtures.

The Modern Fireplace is used for style as well as for heating and is an important factor in the decorative scheme of the house.

It is furnished with those articles which add to its attractiveness and utility, such as fire screens, decorative andirons, fire-baskets, grates, etc.

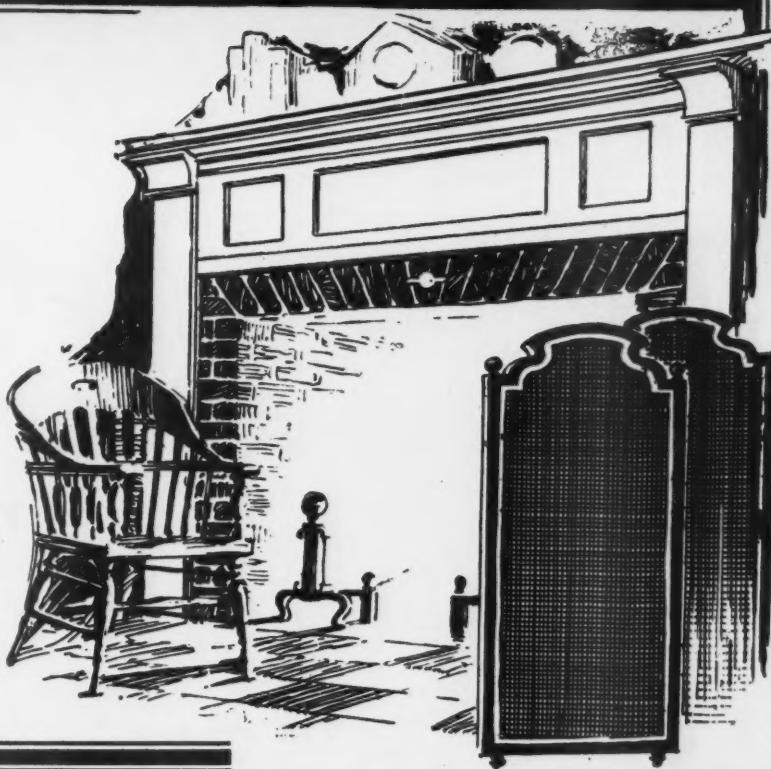
The Builder is the logical man to supply these fixtures, and their sale will mean an additional profit to him.

Our catalog is fully illustrated and contains detailed information on each article. Your customers can readily make their selections from it.

*Write Today for Catalog No. 1954*

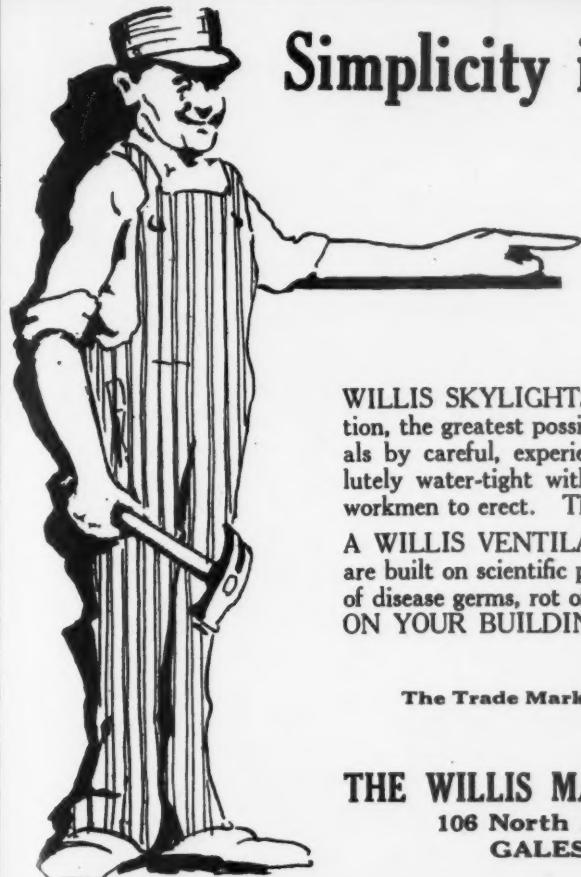
**Stover Mfg. & Engine Co.**

734 East Street      FREEPORT, ILLINOIS



A Postal Brings Our Catalog

## Simplicity in Skylight Construction



WILLIS SKYLIGHTS are constructed to give the maximum of light and ventilation, the greatest possible glass area for the space allowed. Made of the best materials by careful, experienced workmen. Strong and durable and guaranteed absolutely water-tight without the use of putty. They do not require experienced workmen to erect. The only tools needed are a hammer and screwdriver.

A WILLIS VENTILATOR for every condition and every type of building. They are built on scientific principles to expel foul air. They prevent the accumulation of disease germs, rot of feed and rust of machinery and equipment. USE THEM ON YOUR BUILDINGS.

The Trade Mark



of Quality

**THE WILLIS MANUFACTURING CO.**

106 North Academy Street,  
GALESBURG, ILL.



### Compromise Between Private and General Offices

**A**METHOD largely coming into use of dividing the offices into various compartments without losing the possibility of general oversight is well illustrated in the accompanying photograph of the offices of a large eastern manufacturing plant. No partitions obstruct the light. Yet the sales manager, the advertising man, the cost department, the works manager, the superintendent, etc., each with the necessary

possible for two or three men to use the same stenographer or filing clerk, these departmental desks, flat topped of uniform design with the architecture of the room are put in the same compartment.

There is no elbow-rubbing and it is even easier for departments to communicate with each other than it would be in a single undivided, crowded room. Visitors are first shown, unless they have special directors to the visitors' room where the official generally comes to them. Afterwards he may take



**Compromise Between Private and General Offices.** The Solid Partitions Give the Privacy, While the Large Open Space Allows Plenty of Light and Air, and the Whole Office Appears More Spacious.

clerks, stenographers and assistants each have a separate domain.

One main corridor leads south from the visitors' room and the employes' room on either side of the main entrance. From this corridor another main corridor branches at right angles, and from both short side passages are taken wherever necessary toward one or two office compartments. The low partitions are much more substantial in appearance and effect than mere railings, and really do divide, with an effect of finality and leisureliness. The head clerk can nevertheless see the whole room, and keep acquainted with the work of each clerk and stenographer assigned to the various departments. Where it is

them to his own desk if he wishes. The busy man soon gets used to the apparent publicity of his surroundings, and tends to be even busier.

PETER F. O'SHEA.



### How True—How True!

Rifenburgh is the expert on starches and their use. He's on the staff of the foremost manufacturers of laundry starches in the country. Rifenburgh was talking about laundry owners and their methods.

"It's the same all over the country," he concluded. "The little fellow is always too big to see you—that's why he's little. The big fellow always has time to talk to you and get new ideas—that's why he's big."

Starch, stoves, toothpicks, lumber, cement or advertising. It's pretty much the same in every line.



## On New York Piers

Where moist salty sea breezes alternate with smoke and gas-laden land breezes in their attacks on sheet metal, ordinary sheet metal doesn't last long.

The New York Dock Company discovered that fact and so, when they built Pier No. 18 at the foot of Joralemon Street, Brooklyn, their engineers, Robbins & Ripley, specified Toncan Metal.

At the same time they specified Toncan Metal for Piers Nos. 17, 36 and 40.

For such severe service as this and for every severe sheet metal service, from Ventilators to Culverts, you'll find Toncan Metal unsurpassed in lasting qualities.

*Toncan Metal Is Sold by Jobbers Everywhere*

**THE STARK ROLLING MILL CO.**  
CANTON, OHIO

*Sole Makers*

Our Book, "Corrosion—The Cause—The Effect—The Remedy," should Be in Your Library. Write for It.





*Lakewood Universal Mixer, owned by C. H. Johnson Company, Chicago, used in building construction.*

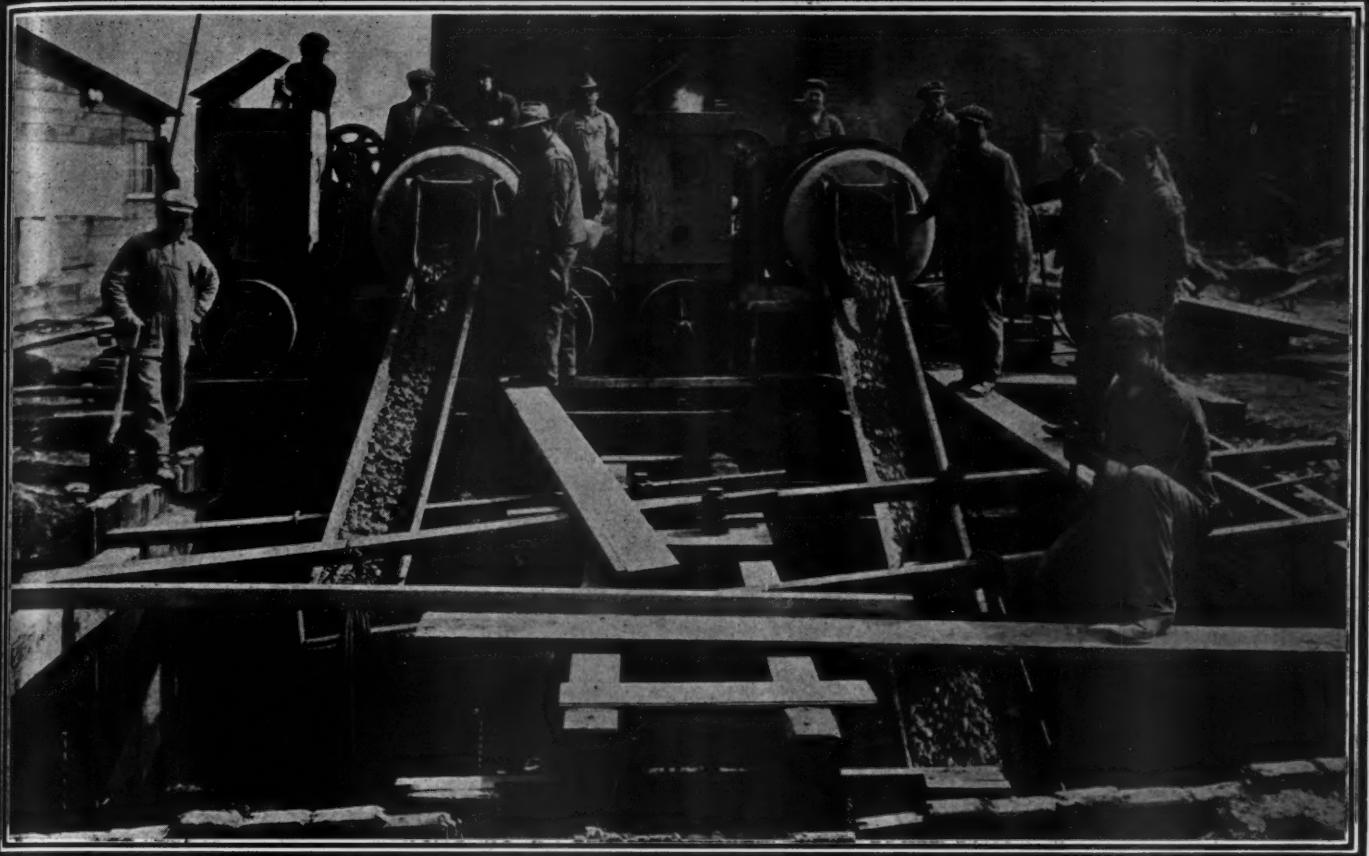
## 10 Lakewood Universals Used by North Chester Realty Company

ON building construction near Philadelphia the North Chester Realty Company used 10 Lakewood Universal Mixers

The Casper Ranger Construction Company used six Lakewood Universals to mix concrete for the foundations for 300 houses to house shipbuilders at Quincy, Mass.

Wells Brothers used seven Lakewood Universals at Harrisburg, for government housing work.

These and hundreds of other instances where one, six, ten or more Lakewood Universals have been used on one job show that contractors thoroughly appreciate the value to them of using Lakewood Universal Mixers.



Two Lakewood Low Charge Mixers owned by F. C. Stender Co. of Providence, R. I., mixing concrete for footings.

## 110 Lakewood Low Charge Mixers in France with the Engineers

FOR service "over there"—where every conceivable kind of work was done under the most trying conditions—Lakewood-Milwaukee Low Charge Mixers were chosen.

Speed and dependability were the two big requirements. And these Lakewood-Milwaukee Low Charge Mixers have speed and can be counted on to do their work regularly day after day.

There are many other features of Lakewood-Milwaukee Low Charge and Universal Mixers that will interest you—all described fully in a new 28-page bulletin.

*Send today for your copy of Bulletin 21-A*

THE LAKEWOOD ENGINEERING COMPANY  
CLEVELAND, U. S. A.

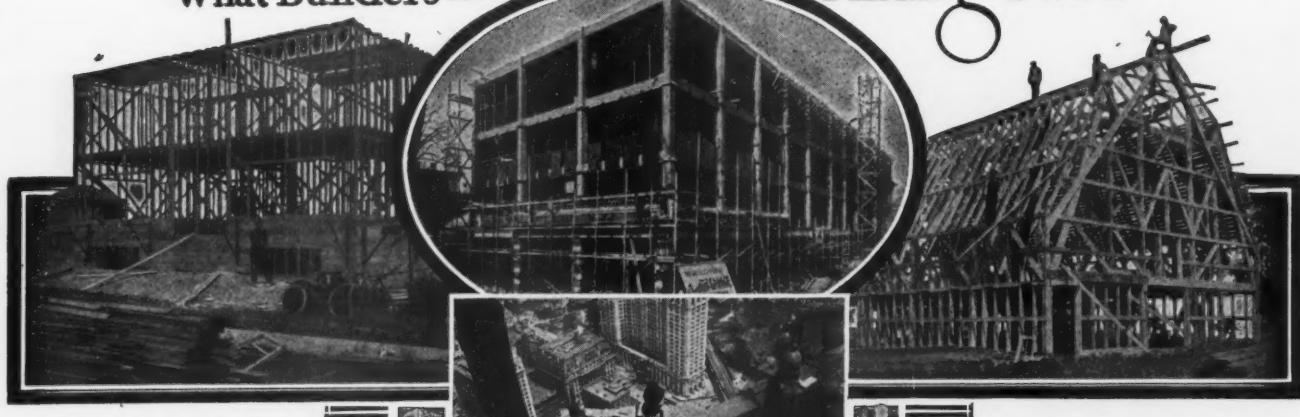
Manufacturers of Concrete Mixers, Chute and Tower Equipment, Concrete Carts, Contractors' Cars, Clam Shell Buckets, Paving Mixers, Grout Mixers and Complete Concrete Road Construction Plant.



**Sign and Mail the Coupon**  
THE LAKEWOOD ENGINEERING COMPANY, Cleveland, Ohio  
Please send copy of Bulletin 21-A and complete information about  
Name...  
Concrete Mixers.  
Company...  
Street Address...  
City...  
State...

# OUT ON THE JOB

What Builders are Finding Good

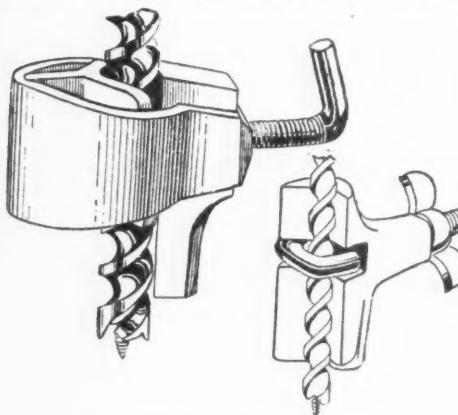


**EDITOR'S NOTE:** The American Builder does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or

seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address American Builder Information Exchange 1827 Prairie Ave., Chicago.

## Augur and Bit Stops of Aluminum

HERE are illustrated two little devices that carpenters and builders will find handy and efficient in their work. They are adjustable augur and bit stops, that can be set so that either the augur or the bit will bore a hole at any desired depth.



Light Aluminum Augur and Bit Stops.

drill from ranging from the minimum to nine-sixteenths of an inch. With the Y removed it takes tools up to one inch. The grip holds the augur, bit or drill rigid.

The smaller stop takes bits one-eighth to one-half inch in diameter and is strong, light and durable.

Both of these stops are made of aluminum and are guaranteed against slipping. They are inexpensive.



## Stairway Disappears in Ceiling, Saving Space

THERE are many types of buildings where stairways are necessary and at the same time the owner dislikes to use the space they take up, as it could be better utilized for other purposes. Examples are in bungalows, where access to the attic is wanted, but it is inconvenient to put in a stairway, and the same condition is found in many two-and-a-half story houses, store buildings and garages.

To get around this difficulty of building in a stairway

there now is constructed a movable stairway that is easy to operate, sturdy in construction and that disappears in the ceiling, the opening being closed by an artistic panel. The stairway is shown in the accompanying illustration, installed in the ceiling of a bedroom of a bungalow, giving access to the attic above.

The stairs are mounted on rigid wheels on the ceiling panel, which is attached to the trimmer by hinges. The panel is fitted with spring barrels, cable holders and equalizing bars. The stairway fits between the equalizing bars and the lugs of the spring barrels. On the floor on each side of the stair opening, pulley brackets are attached to the side jambs.



Disappearing Stairway Has Many Uses and Saves Considerable Space.

# Contractors' Equipment for All Jobs—Large or Small—Equipment That's Made Good

Thirty-eight years' experience in the manufacture of equipment for construction work enables our organization to co-operate with contractors intelligently.

Let us aid you in the selection of your equipment.

Whether it's a wheelbarrow, hoist or paver, you can rest assured the design, material and workmanship are unsurpassed if the equipment bears the Lansing name.

And with branches in seven of the larger business centers—and dealers everywhere—you can depend upon prompt service on repair parts.

Let us send you complete information about the Lansing line of contractors' equipment. Our 48-page concrete mixer catalog will be sent you upon request.

## Lansing - Company

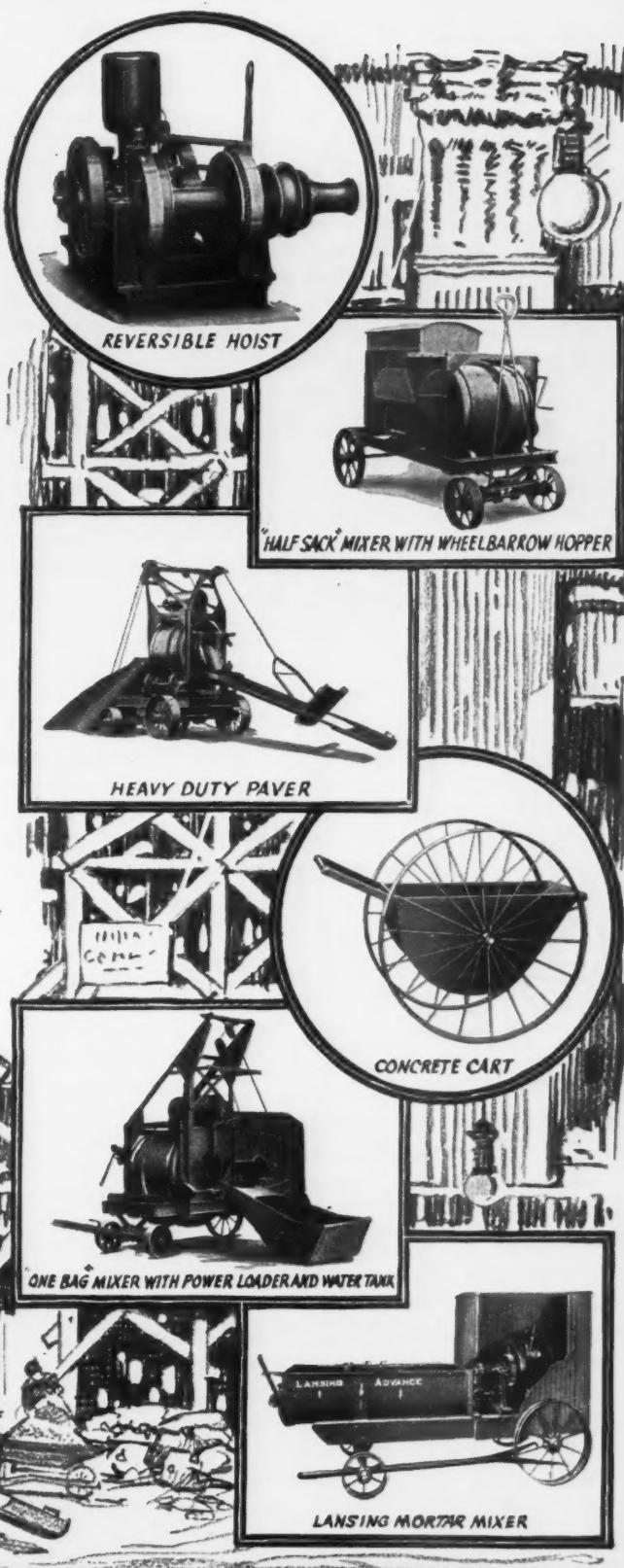
22 North Cedar Street, Lansing, Michigan

### Branches:

New York      Boston      Philadelphia      Chicago  
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"Build now. Homes, schools, churches and roads make America a better place in which to live."

W. B. Wilson, Secretary,  
U. S. Department of Labor.



# LANSING

COMPANY

"KEEP YOUR PRODUCT ON WHEELS"

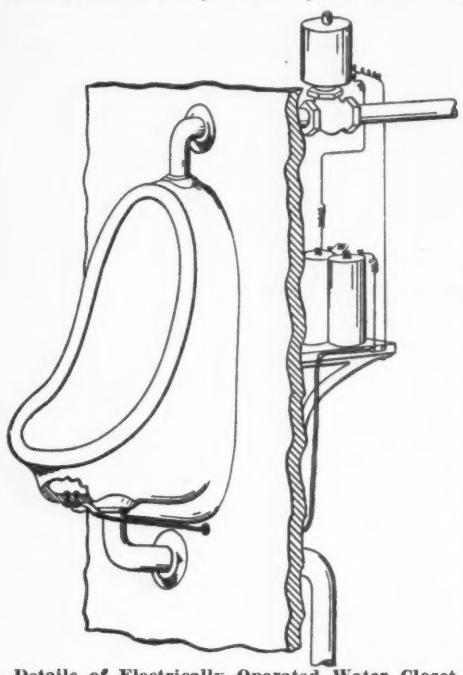
After the installation is made, the panel is the only part visible in the ceiling. To use the stairway a light pull on a chain brings it into position and the stair horse then is rolled down the panel onto the floor. To fold it back into the ceiling the stairhorse is rolled up on the panel. The spring barrels on each side of the stair horse do the work with a little assistance from the operator.

The stairways are made in various dimensions and with panels of different materials, so that they will conform to the trim of the rooms in which they are used. They are now installed in hundreds of homes, garages and other buildings and are reported to be giving excellent service and satisfaction.



### Automatic Electric Bowl Flusher

Conservation of the water supply in flushing bowls long has been a problem with plumbing engineers. Here is a new invention that has just been placed on the market that operates automatically in a unique way.



Details of Electrically Operated Water Closet Fixture.

in the wall. The current is supplied by the two electric batteries.

As the bolts are not connected by any substance that is a conductor of electricity, they are insulated, one from the other. Water is not a good conductor of electricity. But the waste from the human body is. When this waste is allowed to flow between the two bolts, or contact points, a circuit is formed and the valve is automatically opened. Then the water washes out the waste that formed the connection, closing the valve.

This device has only recently been patented, and is now available for builders and plumbing contractors. The fact that it operates only when necessary will make it popular with the owners of all sorts of buildings where toilets are used, as stopping the waste of water is an economy that every building owner wants to make. This bowl accomplishes that purpose and at the same time is a clean toilet fixture.

### Rubber Foot Grip Prevents Ladder Slipping

Since its introduction several years ago, the ladder suction foot grip has become a part of the equipment of many carpenters and builders. This little device, made of cast iron with a rubber grip pad, provides security to the man on the ladder, eliminates the necessity of a cleat or a man to hold the ladder, and will cling to a highly polished surface, such as steel or glass. It was designed by a practical man who had handled ladders for years and knew the advantage of being able to work in the security that nothing would happen to his ladder while he was on it. The



Rubber Foot Grips Placed on Ladder Ends Prevents It from Slipping. Safety Device That Prevents Injury.

accompanying illustration shows a ladder equipped with the grips, placed at an angle on smooth steel.

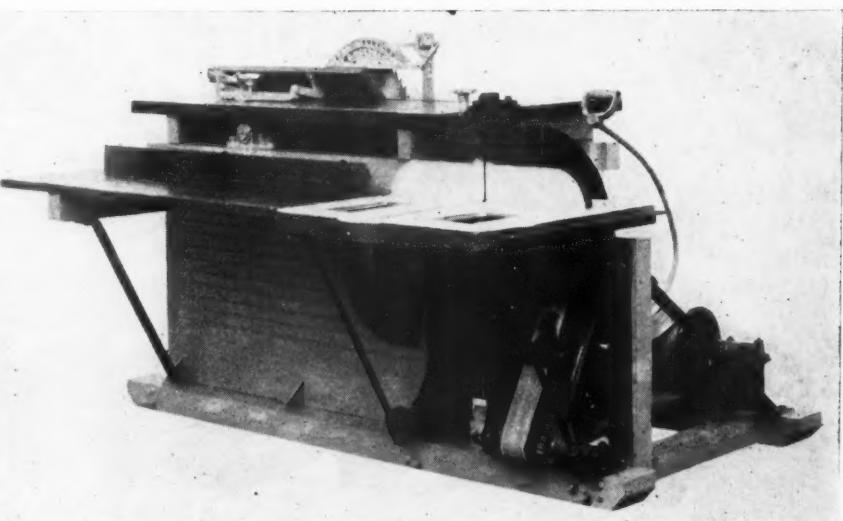


### Portable Powerful Rip and Cross Cut Saw Rig

The increasing demand among builders, lumber dealers and concrete contractors for a more powerful portable rip and cross-cut saw rig has brought onto the market the outfit shown in the accompanying illustration. The rip saw is mounted in the main saw table, while the cross-cut saw is in a swinging arbor. Both are driven by a two-cylinder kerosene engine, which develops eight full horsepower.

Both saws are twenty inches in diameter and have a cut-

(Continued to page 126.)



Portable Rip and Cross-Cut Saw Rig With 8-Horsepower Engine Attached. Designed to Do Both Light and Heavy Cutting on the Building Job.

# Now Completely Covering the Great General Building Field



"AMERICAN BUILDER" and its twin brother "FARM MECHANICS" now offer both readers and advertisers a service covering in a unique way the great field of rural improvements, homebuilding, and general construction as found in the growing cities and towns.

"FARM MECHANICS" starts with the turning over of the soil, and covers farm building improvements and associated subjects more thoroly than any other paper. It is a real illustrated magazine for farmers.

"AMERICAN BUILDER" starts with the rural builder and comes right up thru the general building field to the largest city work-reaching the enterprising class of builders, architects and building material dealers.

"FARM MECHANICS" is read by the prosperous farmer who will make building improvements. "AMERICAN BUILDER" is read by the farmers' "architects" and by the enterprising building contractors and architect-builders of the growing cities and towns.

Here is a great pair for producing business, the one going to farmers, the other to builders and architects—and you will find both in the offices of the best lumber dealers.

## Why We Started "FARM MECHANICS"

In the "AMERICAN BUILDER" alone, we are not able to devote as much space to farm building as the subject deserved, without injustice to the thousands of town and city builders and architects who are more interested in town construction. So we started "FARM MECHANICS" and made it one hundred per cent farm building improvements, labor-saving equipment and specialties on the farm and related subjects. The first issue (May 1st) was a magazine of 116 pages, twelve of them being in colors.

## A Bigger and Better "AMERICAN BUILDER"

The "AMERICAN BUILDER" will continue to interest the enterprising architects and builders, who are handling the worthwhile construction work out in the country. But in addition, we will have more and more for the city contractors, the real estate builders, and the architect-builders of the growing towns and thriving cities.

Readers and advertisers:

Use the "AMERICAN BUILDER" to the fullest extent—  
And get acquainted with "FARM MECHANICS."

## THE RADFORD PUBLICATIONS

1827 Prairie Avenue, Chicago

AMERICAN BUILDER

THE RADFORD ARCHITECTURAL CO.

FARM MECHANICS

# FARM MECHANICS



WITH  
BETTER  
BARN  
COLORS  
IN COLORED

Farm Machinery and Power Equipment  
Farm Buildings - Farm Management  
PUBLISHED MONTHLY BY FARM MECHANICS CO., 107 MARIE AVE., CHICAGO.

# Your Copy is Ready

**“FARM MECHANICS”** is out at last—  
bigger and better than we promised.

The first number is a magazine of 116 pages, twelve of them in colors.

You knew from our advance announcement that this new Radford Publication would be a high grade magazine of great interest to you on all your farm building work. You have been eagerly awaiting its coming.

And now it's ready. A copy of the big FIRST ISSUE is all wrapped and waiting to be posted to each reader of the AMERICAN BUILDER who wants to see it.

## Don't Miss This

You will enjoy the 4 pages of FARM BUILDINGS IN COLORS—each building illustrated with blueprint floor plan and with Champion Live Stock in the foreground.

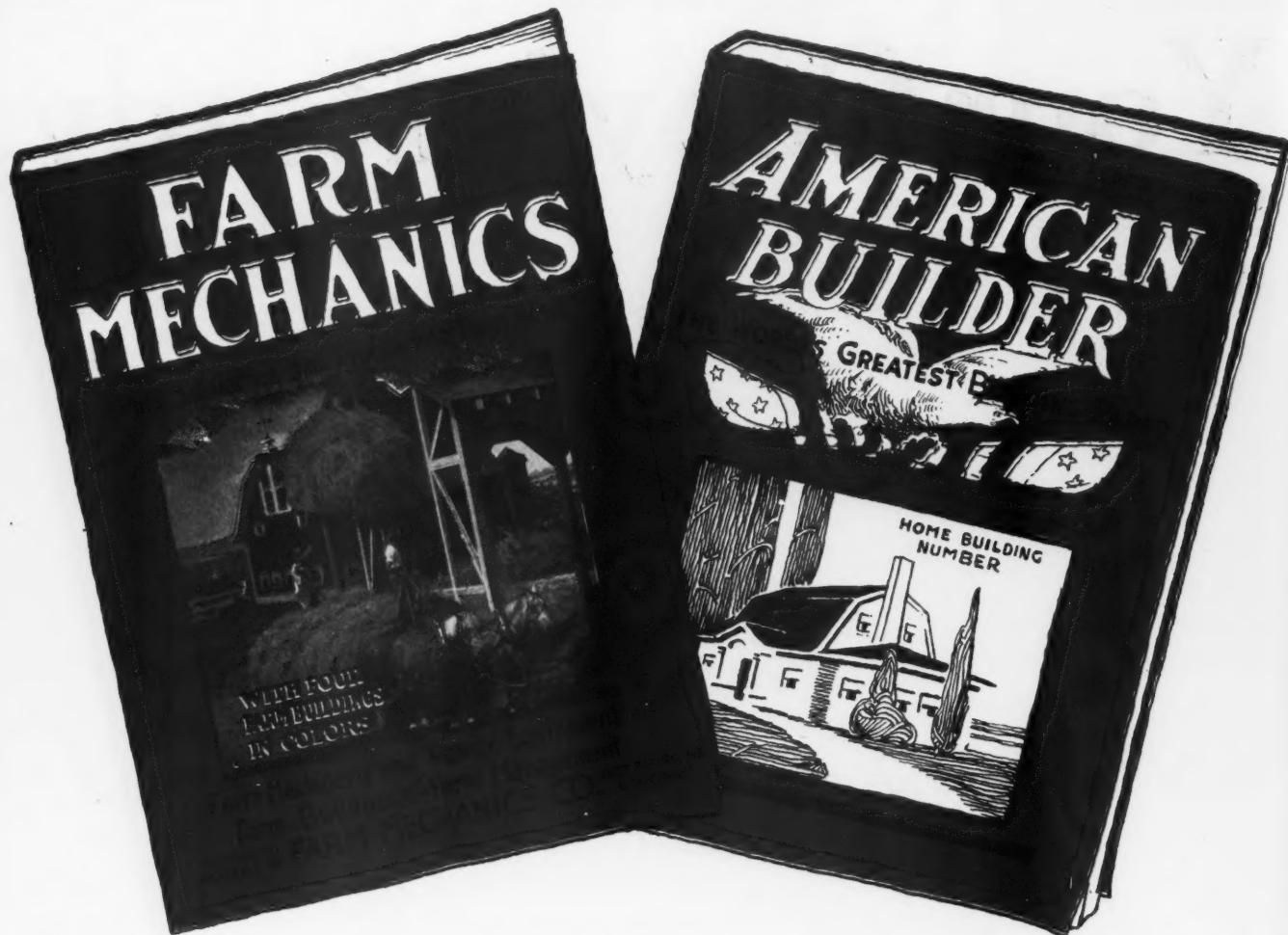
You will want to read every word of the articles on Modern Farm Homes, on Garages, Tractor Houses and Implement Sheds. There are ten pages on Modern Barn Plans, that won't let you go till you finish them. There are more than 100 fine illustrations and dozens of timely articles on modern farm improvements and agriculture.

Study this table of contents of May "FARM MECHANICS"  
and then ask us today to send your copy

USE COUPON ON NEXT PAGE

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**See next Page for details of Special Offer to  
American Builder Readers**



## Here are a Great Pair—

You know already how good the AMERICAN BUILDER is—Let us send you today a copy of the first issue of our new magazine, "FARM MECHANICS," see for yourself how excellent this new paper is. If you are interested in any way in rural improvements you will be a booster for "FARM MECHANICS." Begin with the first.

### REQUEST COUPON FOR FIRST ISSUE

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1827 Prairie Avenue, Chicago

Date \_\_\_\_\_

Please send me by return mail my copy of the INITIAL ISSUE of "FARM MECHANICS;" I want to look it over at my leisure. You are to consider this an order for my subscription unless I notify you to the contrary within 10 days from date. I want "FARM MECHANICS" to come each month for TWO YEARS at your Special Introductory Half-Price Offer in connection with a ONE YEAR subscription to the "AMERICAN BUILDER." Send me invoice for \$3.00 for both which I agree to pay within 30 days.

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If AMERICAN BUILDER renewal is not wanted at this time, check here  and we will bill for one dollar for a 2-year subscription to "FARM MECHANICS."

#### YOU SAVE \$1.00

AMERICAN BUILDER, 1 year, \$2.00

FARM MECHANICS, 2 years, 2.00

Regular Price, \$4.00

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if desired)



*The progress of modern engineering  
parallels the development of the use  
of CEMENT ~ ~ ~*

Whenever concrete in quantity must be carried over a wide area of operation, the chute, if possible, is employed. Its efficiency over the old-fashioned string of wheelbarrows often makes possible an enormous economy in hours and dollars.

With its great mills located throughout the country and served by a large number of railroads, the Lehigh Portland Cement Company is able to provide, through its many dealers, a dependable Lehigh Cement service. Like the chute, it can be relied upon to deliver promptly the required material where it is needed with the least risk of costly delay.

**LEHIGH PORTLAND CEMENT CO.**

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NEW YORK N.Y. - KANSAS CITY, MO. - OMAHA, NEB. - BOSTON, MASS. - MINNEAPOLIS, MINN. - PITTSBURGH, PA.  
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*The National Cement*

**LEHIGH**  
CEMENT

(Continued from page 120.)

ting capacity of six inches. Both rip sawing and cross-cutting can be done at the same time. The general construction of the outfit is such that it will stand rough handling and moving from one job to another. The main frame and rip table are made of clear maple, bolted together. The legs, braces and cross-cut table are of iron. The main drive belt from the engine runs to a countershaft at the rear of the rig and the arbor belt and cross-cut countershaft are driven from the main countershaft. The rip saw and cross-cut saw both are controlled by clutches, so that either saw can be started or stopped independently of the other. The rip gauge can be tilted to an angle of forty-five degrees. An extension wood table with back stop is provided on the left of the cross-cut table and a support is cast on the right side for putting on a long extension table on the job.

The twin-cylinder horizontal kerosene engine was designed especially for this outfit. It is a compact little motor and gives a uniformly steady power. The engine is of the throttling type, with a forced feed lubrication to the cylinder and all crankshaft bearings.

This is a powerful portable saw rig that will do either heavy or light sawing right on the job. In the great amount of construction work to be done this year it will prove a valuable addition to the equipment of contractors who have heavy cutting to do.

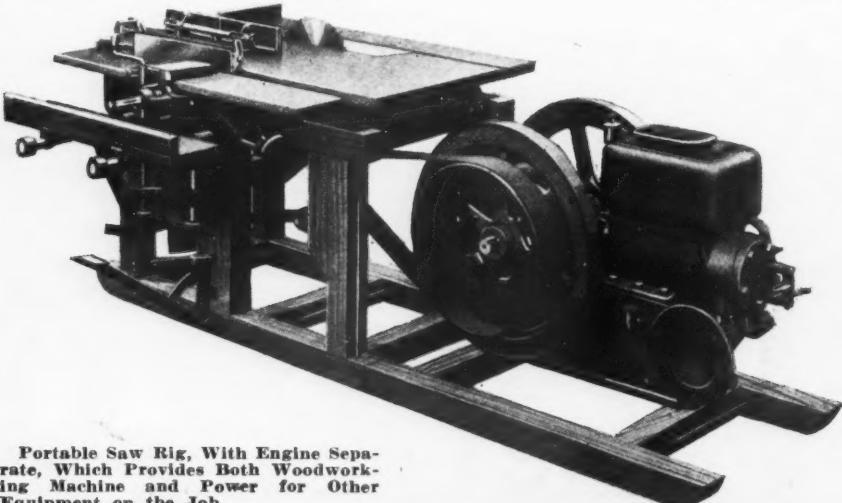


### Portable Saw Rig with Engine on Separate Skids

A portable saw rig is now recognized as one of the essential pieces of equipment for every contracting builder. The saving in the time of the men and the quality and different kinds of work that can be done on it make the saw rig valuable on the site of every building operation.

Herewith is illustrated a new type of saw and power rig. The saw bench and engine both are on skids, but instead of the engine being built into the rig, it is separate. The advantage of this is apparent, as by merely slipping off the belt and removing one bolt the contractor has power for a small concrete mixer or a hoist.

The saw rig shown is a combination rip saw, cut-off saw, mitre saw, dado machine, gaining machine, grooving machine, rabbitting machine, tenoning machine, jointer or planer, boring machine, matcher, moulder, sander and hollow chisel mortiser, a combination that will do practically everything a builder requires. The machine is compact, self-contained and substantially constructed. The frame is of seasoned hardwood, strongly bolted and braced. The top is of iron, 54 by 30 inches, and is hinged at the rear of the frame so that it readily can be raised and lowered by a hand screw. It is held in place by side clamps.



Portable Saw Rig, With Engine Separate, Which Provides Both Woodworking Machine and Power for Other Equipment on the Job.

The adjustable ripping gauge has a tilted fence for bevel sawing. It opens back fifteen inches from the saw. The cut-off gauge slides in a planed groove the entire length of the table and can be set to cut squares, mitres, or at any angle desired. The jointer or planer is entirely separate from the top of the machine. Except when in use the jointer knives are covered by a guard. The head is of steel and is fitted with four four-inch knives and will receive matcher bits or moulding cutters for working a large variety of shapes. The tables are forty-three inches long and adjustable.

The engine is a five-horsepower, four-cycle, water-cooled type. It is mounted on skids that correspond with those of the rig, and when in use is held to the saw bench skids by a strong bolt. Either a kerosene engine or an electric motor may be substituted. The floor space required for the machine is 54 by 54 inches, and with the engine in the rear, 54 by 102 inches.

This method of combining power plant and saw rig will appeal to many contractors.



### Fine Example of Modern Dairy Barn

(Continued from page 89.)

plies the animal with fresh water at all times. The milk room is placed at the center of the cow stable. The carrier track extends into this building, eliminating the work of lugging the milk by hand. The office, too, is centrally located.

The dimensions of the barn are 36 by 92 feet and of the cow stable 36 by 82 feet. The silo is 16 feet in diameter.

By a study of this floor plan it will be seen that every convenience for handling the good-sized herd has been installed. Here healthy, productive animals can be kept at a minimum of labor expense.

Such barns as these give the owner the greatest satisfaction and are credits to the contractor who erects them. The saving in the labor of caring for the livestock and the greater productivity of the cows make such buildings economical ones for the dairy farmer to erect.



### An Optimist

It was the day after payday. One of the laborers in the building excavation had been the victim of robbers the night before. They had taken his pay and the boss had stopped to sympathize with him.

"Mighty sorry to hear of your loss," began the boss.

"Oh, well, easy come, easy go," said the victim as he sunk his pick into the clay.



### Too Much Capital Required

An improvident carpenter who had learned that the contractor he worked for had increased his business considerably by adding a concrete mixer to his equipment decided that he would go into the contracting business. So he wrote to a mixer manufacturer asking prices. The answer came promptly and elicited this reply from the carpenter:

"If I had \$200, what do you suppose I would want with a mixer?"

# DO YOU WANT ANY OF THIS MONEY?



PIPELESS FURNACES—the properly designed and built kinds have come to stay. They are taking the country by storm. Owners of stove heated homes everywhere are installing Pipeless Furnaces—because of their efficiency, economy, both of installation and operation, and cleanliness.

Mr. Contractor—Mr. Lumber Salesman—Mr. Specialtyman don't you want to get in NOW—and secure some of the profits to be made in your city or county—selling Hero Pipeless Furnaces?

# HERO Pipeless Furnaces

Hero Pipeless Furnaces are so scientifically designed that they heat the whole house, evenly and perfectly.

Hero Pipeless Furnaces are the only furnaces that wash all the air as they warm it. Entirely surrounding the base of the heater, over the bottom of all the air spaces, are the water pans.

As all return air, in being heated, must pass across this water, it is washed clean of dust, lint and impurities. And the proper amount of moisture is added to make the air in the rooms healthful and invigorating. No stifling, deadening, dry air in Hero Heated Homes.

**Special Offer to Contractors or Salesmen**  
We will establish you in the Pipeless Heating business—a business that pays a good profit. We will supply advertising matter—and give you active sales help. In addition we make you a special sales inducement—to help close orders quickly—of our clock damper regulator—Ask for details.

**Hero Furnace Company**  
59 W. Lake Street CHICAGO

# Art Craft Roof

OPPORTUNITY is a good old word. Art Craft and opportunity are synonymous. Art Craft laid right over old wooden shingles saves expense and the litter of ripping off the old roof. This year more than ever Art Craft is timely. It is the economy roof. Are you pushing Art Craft to land new business?

Art Craft is probably just the roof your customers need. It is a satisfaction builder for your customers, as well as a profit builder for you. It *saves* money for him and

*makes* money for you. Let us tell you how Art Craft will bring you more business. Until you know the facts about Art Craft you are missing out on a real opportunity.

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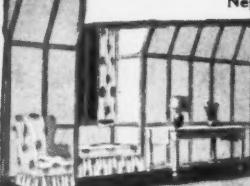
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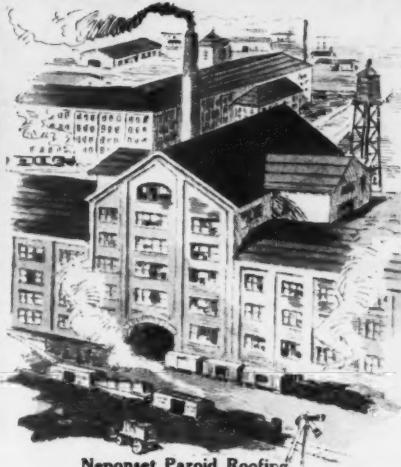
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**Neponset Wall Board**  
Neponset Wall Board makes attractive interiors without lath, plaster or wall papers.



**Neponset Building Paper**  
Neponset Building Paper saves coal; under clapboards it acts like a warm blanket.



## *Our Type of Man*

**I**F you are the kind of master craftsman who prides himself on the high standard of his calling, you are the man we want.

You are the man to use the Neponset idea of quality. Now is the time to start.

Business is good. Neponset big-space advertising will make it better. We stand ready to co-operate. If you want to learn the dollars and cents opportunity of being the Neponset Man in your town, write us today. Your letter will meet with promptness and courtesy.

**BIRD & SON, Inc., Dept. C, East Walpole, Mass.**

CHICAGO

(Established 1795)

NEW YORK

WASHINGTON

Canadian Office and Plant: HAMILTON, ONT.

# NEPONSET ROOFS

# CORRESPONDENCE



## Questions Answered and Ideas Exchanged.

Our Readers are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Carpenters and Builders

### Has Anyone These Rules?

To the Editor:

Please give me a rule for getting the length of rafters on a round or gothic roof barn. Also a rule to get the square feet in the roof and gables.

Kensal, N. D.

C. C. HARDRAUGH.

all with the Gothic roof. Have been pretty busy the last couple of years.

OTTO G. VAN DYK.

### Never Stops Learning

To the Editor:

Sugar City, Colo.

I have been a subscriber to your valuable paper for years, and also own a set of your reference books.

I enjoy and profit by reading your publications and am glad you advocate quality rather than quantity in labor done by carpenters.

I have been in the building trade for fifteen years and think the time will never come when I will have learned all there is to know. Do not let anyone stop you printing hints, however simple, as those who know them are not hurt and they may help someone.

FRED ROHL.

Churdan, Iowa.

In the May number of your magazine, Geo. W. Stafford, of Murphysboro, Ill., wants a suggestion for watertight window to sleeping porch. Don't put sash down below opening, for how could anybody make them watertight?

I have built several sleeping rooms with three sash on a side, all to open. My plan is to make a triple mullion frame, same as any window. Make the jambs nearly twice as long as sash; use open or slip heads; put pulleys at top of jambs, same as window; size upper half of jambs, same as studding and lath to jambs using no studs. Case inside same as any window. These have given excellent service, and you can open one or all, as desired, and they will be perfectly storm-proof when closed. Use 1 1/4 stuff for jambs.

R. H. HALLOWAY.

### Built Six Big Gothic Barns in Two Years

To the Editor:

Oak Harbor, Wash.

Am also sending a picture of one of the barns I built last year. It is 40 feet by 138 feet and is all modernly equipped. Cement floors, Loudon stanchions and stalls.

I built two of these barns last year and four the year before,

### Skylight Trouble Diagnosed

To the Editor:

Newburgh, N. Y.

We note on page 60 of your April issue the trouble with a skylight. This trouble is undoubtedly due to the glass having been cut too large.

In all skylights there should be at least one-eighth inch "play" for each width of glass and on a good construction of metal skylight one-fourth inch is not too much.

This glass should not be bedded in putty, but should be bedded in, and pointed up with a good grade of elastic cement, such as "Connors American Seal" or "Hetzels."

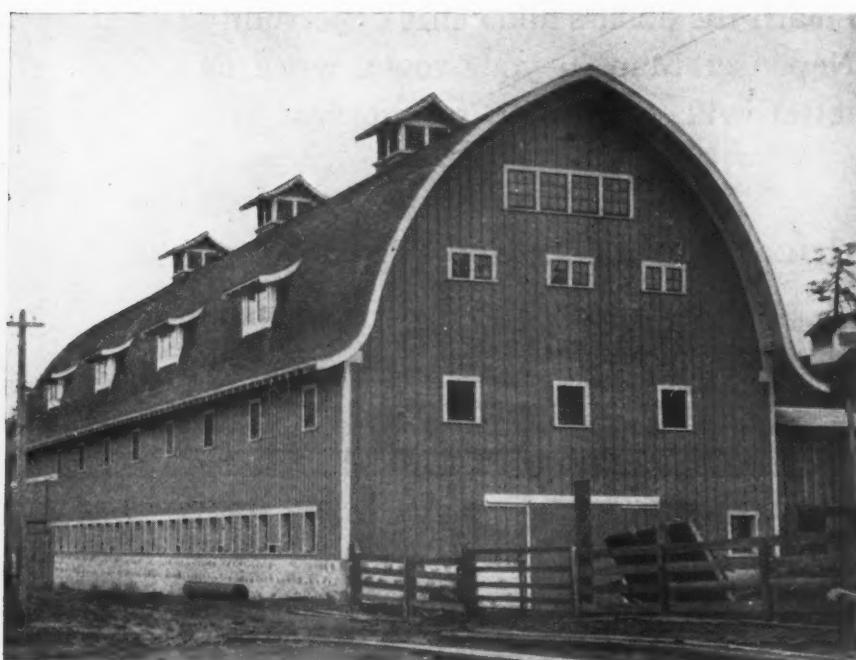
This happening in cold weather might be accounted for by the contraction of the framework holding the skylight, which will have the same effect as the expansion of the glass if the framework on which the skylight rests were entirely rigid or were not affected by contraction.

However, neither the contraction nor expansion would have done any harm if the glass had been of the proper widths.

The remedy is to take them out and cut them down. The trouble might be remedied by cutting down each alternate row of glass or probably every third row of glass.

ATLAS ROOFING COMPANY,

H. A. Daniel, President.



One of the Fine Gothic Roof Barns Built by Otto G. Van Dyk, Oak Harbor, Wash.

# Are Your Houses in Demand?

Put HOLLAND Furnaces in the houses you build, and prove to your clients that you know how to give them maximum comfort, convenience and economy. HOLLAND Furnaces will insure the popularity of your houses and will distinguish you as a master home-builder.

## HOLLAND FURNACES Make Warm Friends

This slogan comes to one's mind as naturally as breathing, because every HOLLAND that is sold, sells many more. The HOLLAND is the simplest, strongest furnace made. We sell on a positive guarantee, because we know why we can do it.

Our Heating Engineering Department is at your service. We have an excellent proposition for Contractors and Builders. Write and let us tell you about it.



## HOLLAND FURNACE COMPANY

*World's Largest Installers of Furnaces*

Factories: HOLLAND, MICHIGAN; CEDAR RAPIDS, IOWA

**Running Rafters for Gothic Roof Barn**

To the Editor:

I have been very much interested in Gothic roofs and the different plans of making curved rafters. I inclose sketch of one I made. Please inform me in regard to the strength of these rafters. I first thought of using 1 by 2-inch boards, but changed to 1 by 3s. Please give me your opinion.

ADOLPH JUST.



Adolph Just's Method of Running Rafters of Gothic Roof Barn.

**Answer**—Gothic roof rafters usually are formed of 1 by 4s, which provide a stronger rafter. More often the braces are of one piece extending from the plate to the rafters near the top. The two sides of the roof are tied together near the ridge, so as to strengthen the roof and provide for the hay carrier track. Undoubtedly some of the steel-square sharks have some ideas to offer on this subject.—THE EDITOR.

**Letting Go Some of Our Pentup Feelings**

To the Editor:

La Mesa, Calif.

In the March issue I read with varied sensations the letter from Brother Chip, "Gold Stripe." He certainly has started something about the handy man who asks "wee sma' boy" questions. Sure we all know him. I do, in my twenty-five years' experience. I am at present doing some (fine finishing) on extensive chicken houses, and at the ranch, is one of these very would-be carpenters. Told the boss he could help him out on the work, so got the good word. But please could I sharpen his saw for him. Nuff said.

Just lately on a \$10,000 job, the swell we were building for (in the noon hour chat) asked a conundrum. "Why do you fellows (carpenters) get less per day than the cement man laying sidewalks. Their equipment consists of a few trowels, while your chests seem to be worth at least \$200.00?" (No answer.) Yes, sir, our trade (isn't it a profession?) is sure abused, and if some practical system of registration, like our friends the plumbers have, could be originated and perfected, then, too, would our trade have a fence around it.

I think it would be a good debatable subject for the Correspondence column. But! Meanwhile we suffer from these "butters in," who bring discredit to our name, and in many cases they are merely men who have a long list of capabilities to which they add the sayso of carpenter. Take the ordinary and extraordinary job. The carpenter is the butt for all the other trades; also he has to figure for them all (incidentally.) Why?

I think a lot of good could be done inside our circle and outside, among our abusers, if this thing could be talked over. Please, Mr. Editor, you've done so much for us. Lend your good-will and I believe there are a lot of old sore-heads who will come on in (the water's fine). Yes, sir. Then we will have the AMERICAN BUILDER still further to thank.

M. H. GURLING.

**How to Resharpen Files with Acid**

To the Editor:

Long Beach, Calif.

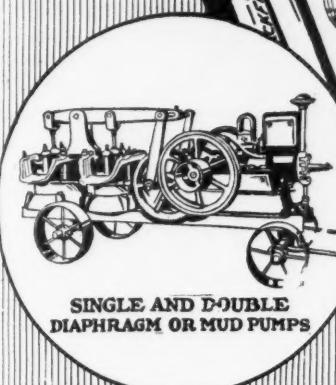
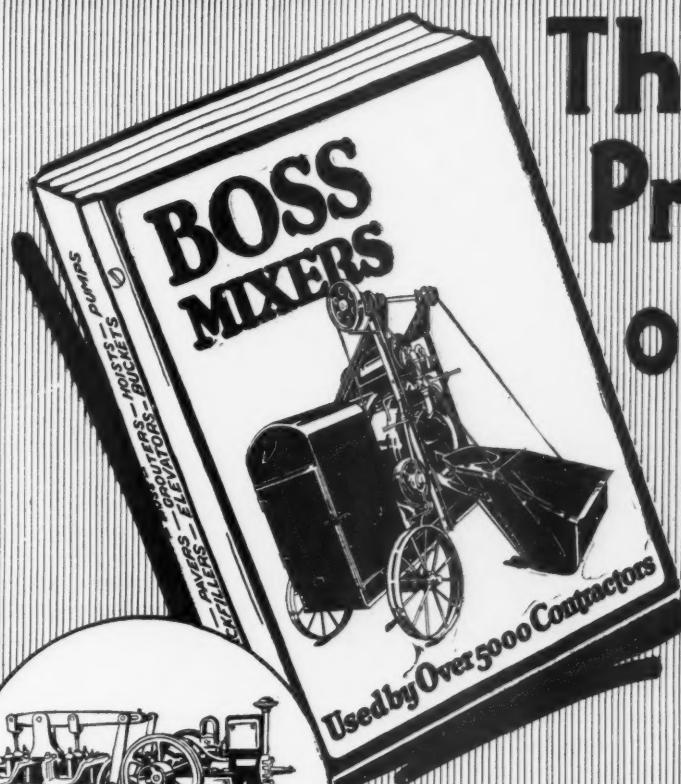
In the March BUILDER Wm. Gemmer, of Clayton, Mo., asked for a method of resharpening worn-out files by acid.

About forty-five years ago I had use for a good many files. A glass or wood dish should be used, as the acid would injure an iron vessel. Wash the files thoroly in warm saleratus water to get them clean; then take two ounces of borax, two ounces of blue vitriol and pulverize fine, adding enough water to cover the files, which should stand on end shank down. The files will soon turn red or copper colored. Then add three ounces of sulphuric acid. When the files have turned to their natural color, take them out and wash in quite warm water, which will clean them, and dry them quickly. Then give the files a thoro oiling of sweet oil, which kills the acid; then wrap them singly in brown wrapping to absorb the oil from the files. If the acid does not properly clean in about one-half hour, more acid can be added. The amount can be varied to suit the number of files and the size of jar.

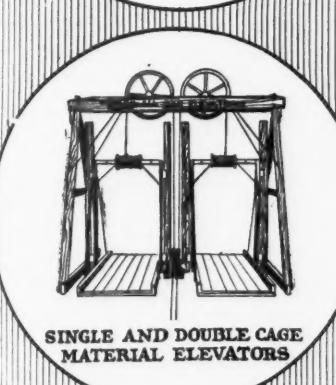
I hope this may help the brother to get his files in order.

L. D. DAWLEY.

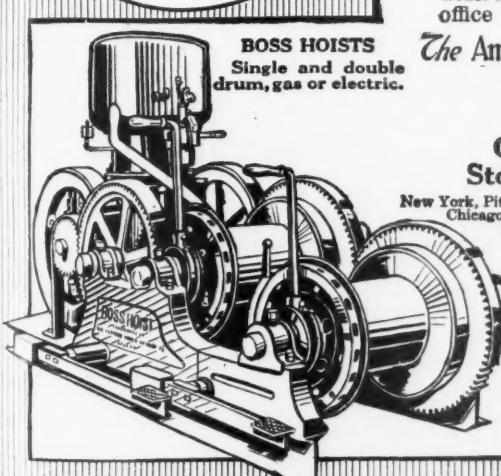
# The Nation's Price Maker on Contractors Equipment



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Single and double  
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Contains the most complete line of Contractor's Equipment ever shown. Fully described and accurately illustrated.

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Find out all about Boss Equipment. See why it has the speed and efficiency that you are demanding. High speed. Light Weight. Hyatt Roller Bearings. Sold on "Money Back" Guarantee. Cash or easy payments as desired. Get in touch with our nearest office at once. Write, wire or 'phone.

The American Cement Machine Co. Inc.

Keokuk Iowa  
THE 300,000 H.P. ELECTRIC CITY

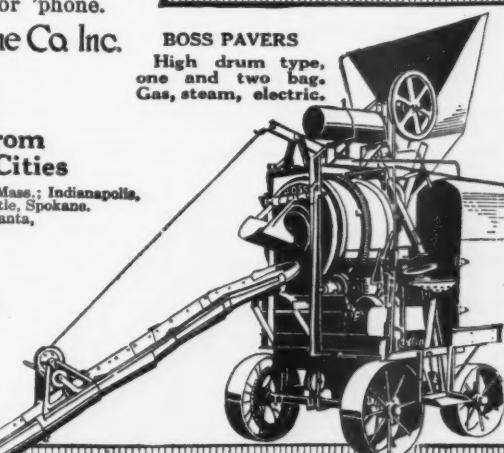
### Quick Deliveries from Stock in Following Cities

New York, Pittsburgh, Richmond, Cambridge, Mass.; Indianapolis, Chicago, New Orleans, Minneapolis, Seattle, Spokane, El Paso, St. Louis, Louisville, Atlanta, Springfield, Ohio.

### THE BOSS LINE

Building Mixers (Concrete or Mortar)  
Pavers  
GROUTERS  
BACKFILLERS  
HOISTS  
CARTS  
MATERIAL ELEVATORS

BOSS PAVERS  
High drum type,  
one and two bag.  
Gas, steam, electric.



**Seeks Retail Lumber Prices**

To the Editor:

Could you advise me the best way to keep in touch with retail lumber prices in the various sections of the United States thru correspondence? It seems to me that one should be able to get quotations from the larger centers, such as Chicago, New York, etc., quite easily, but not knowing the way myself am writing for the information.

E. W. SIMMONS.

Marshfield, Ore.

**Wants Specifications for Carpenter's Tool Box**

To the Editor:

Have you specifications for a first-class carpenter's tool box about two feet wide, three and one-half feet long and 20 to 24 inches high, or something in the neighborhood of these dimensions?

H. R. FOX.

Answer—One was shown in the Correspondence department of the April issue of the AMERICAN BUILDER. EDITOR.

**Working Plans for a Tool Chest**

To the Editor:

Billings, Mont.

I am sending you the design for a tool chest that meets my requirements very well. My idea in making this tool chest was to have it compact and still be able to get what tools I want without removing the rest of them. By putting the

tools in their places it is an easy matter to get "excess baggage" in it, which also helps to keep them from rolling about and getting broken.

C. A. HAYNES.

**Asks Design for Library Furniture**

To the Editor:

East Northport, L. I., N. Y.

I would like to see some designs of a nice library table and other furniture, and also some recipes of how to make the fumed oak finish of same.

I think Brother Metz, of Lincoln, Neb., made a good suggestion in mentioning "estimating." I, for one, would like to see it. It would be very interesting, but as he says, it should be in hours and minutes, for the dollars and cents method is more confusing.

Good luck to the best Building Magazine that ever was put on the market, the good old A. B.

GEORGE W. EHRLE.

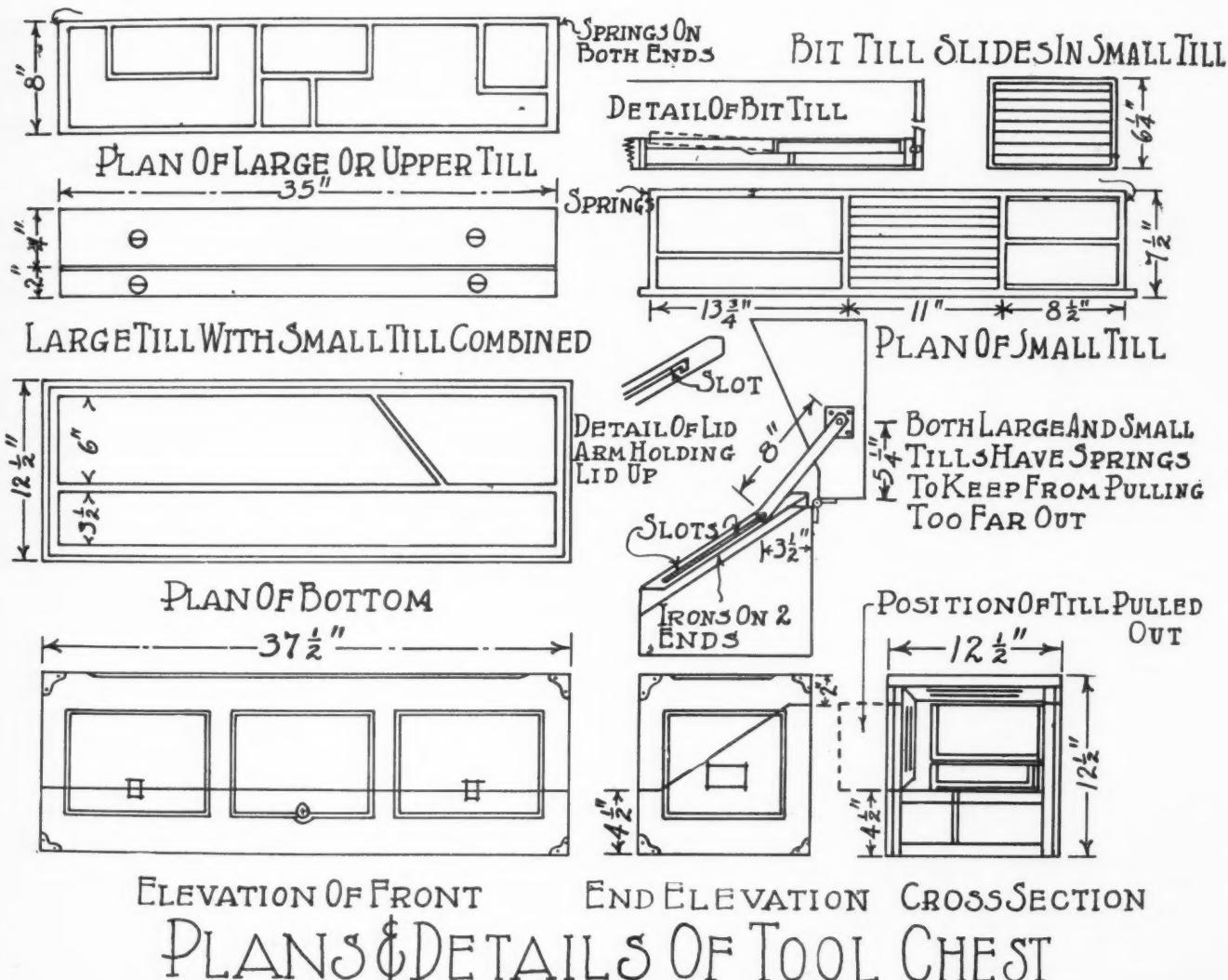
**Finds It Valuable**

To the Editor:

New Albany, Ind.

I received my copy of the AMERICAN BUILDER and am more than pleased with it. I have been a carpenter and builder for thirty years, but I got one little pointer after reading the AMERICAN BUILDER five minutes that was worth two dollars to me the next day. All up-to-date carpenters miss a whole lot if they do not subscribe for the AMERICAN BUILDER.

C. GOODBUB.



C. A. Haynes, Billings, Mont., Answers Many Inquiries With These Plans and Details for a Carpenter's Tool Chest.

Blocks and Stucco of  
Medusa White Cement  
and Medusa Waterproof-  
ing. Auburn Novelty  
Works, Auburn, Indiana



## Use of Waterproofing Cuts Plastering Cost

WHEN the Auburn Novelty Works put up this job for George Campbell, of Auburn, they used "**Medusa Waterproofing**" in stucco and concrete blocks to insure the house being free from moisture.

Then, being sure that the house was damp-proof, they cut costs by applying the interior plastering directly to the block wall without furring and lathing.

As they say: "**Medusa Waterproofing** has given us the block trade for miles around. We have put up nearly 100 buildings in seven years, and grown from an output of one hand machine to a daily output of 1200 blocks, besides other concrete products."

*When you use Medusa Waterproofing  
You Can Depend on It*

### The SANDUSKY CEMENT COMPANY

Department G

CLEVELAND, OHIO

Also manufacturers of Medusa Gray and White Portland Cement—Plain and Waterproofed

**MEDUSA WATERPROOFING**

### How to Construct Hay Carrier Track in a Round Barn

To the Editor:

Richmond, Utah.

We have an inquiry for a round barn, and as we have seen these pictured in your magazine, we thought we might ask you a few questions about them.

We wonder what system is used in filling the silo placed in the middle of such a barn. Where is the ensilage cutter, power, etc., placed to be handy for the wagons bringing in the corn?

Is it necessary to build so that the loads of hay can be pulled up into the hay mow over a bridge, or could a wing be built out so that the hayfork can come out of the barn like the ordinary barn? How does the hay carrier work in going around on a circle track? How does the cable travel that the horse is pulling on to pull the hayfork up and around on the track?

Would it be practical to build one of these round barns with one-half of the basement left open for an open shed and the other half fitted with cow and horse stalls? The construction of this kind of a barn doesn't seem so complicated as some of these other questions, and we would not like to encourage any of our customers to build a barn any part of which would not work out satisfactory to him when completed.

Any information you can favor us with regarding these matters will be very thankfully received.

MONSON LUMBER CO.

**Answer**—This inquiry raises a number of very interesting questions regarding the round barn and the application to it of labor-saving barn equipment.

In the first place, there are no hard-and-fast rules as to the best way of filling the silo, placing the ensilage cutter, or, indeed, any of the questions you have asked.

The size and type of construction, the internal arrangement and the personal preference of the owner all are factors in determining the practice that will be followed.

The round barn may be two or three stories. In the case of the two-story building of moderate size, the silo can easily be filled from the outside by running the blower pipe up to the eaves and then along the roof to the top of the silo. This is the best and most popular practice, as the interior of such a barn is usually too small to allow silo fillers and wagons to get around.

Any round barn silo may be filled from the outside, provided the filler is powerful enough to carry the ensilage past the bend at the eaves. Three-story barns, however, often have a driveway onto the second story, and from the second story it is an easy matter to fill the silo from inside the barn. A trap-door may be cut in the roof to allow the blower pipe to come thru and thus get the benefit of the full capacity of the silo. Or the opening in the silo may be made just where the roof and silo meet.

It is not advisable to build a three-story barn without a driveway onto the second floor. The two-story barn, however, needs no driveway.

With regard to filling the hay mow, the three-story barn may be filled from the second floor, thru an opening in the hay mow floor. The team works inside the barn. The sling or fork runs on a circular track. Special machinery is made for this job, and it operates as smoothly as in the case of the straight track. The shift ropes are kept in the right line of force by guide pulleys, set in a circle inside the track, and so arranged that the carrier is not impeded.

In the case of the two-story building, it is most convenient to build a small wing to take care of the job of mowing away. Here the circular track is used just as in the high barn, but the carrier comes out on a boom as in the case of the rectangular barn, and the horse works outside.

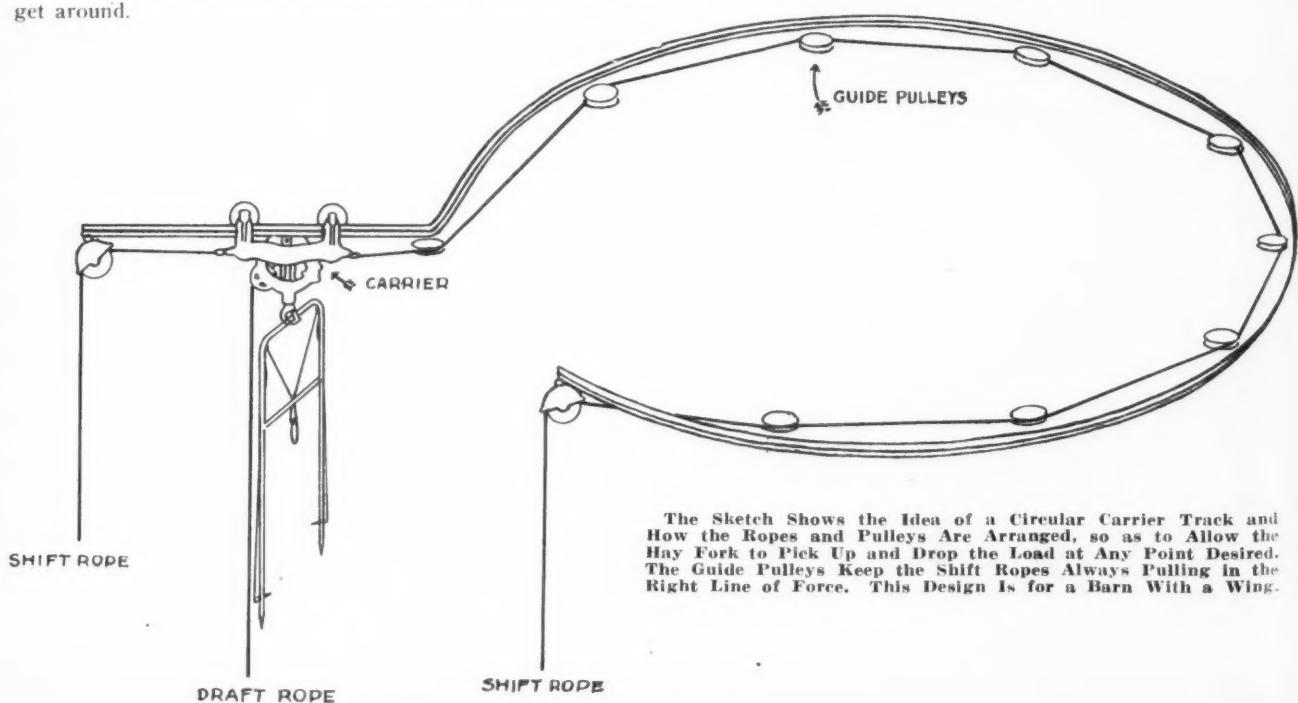
In general, you may rest assured that the barn equipment people have worked out those problems quite thoroly, and a client of yours need have no fear or hesitation on this score.

In addition, we would be glad to prepare and furnish you with drawings showing the operation of the pulleys and carrier, and any other details you may be interested in. What we would require would be a brief statement of the size and general type of barn desired, and the approximate amount of stock it must house.

It is perfectly practical to build a round barn with one-half of the basement left for an open shed and the other half fitted with cow and horse stalls. The whole interior arrangement of the round barn is quite as flexible, and capable of the same sort of modification as that of the ordinary rectangular barn.

In general, the round barn can be constructed so that it will satisfactorily give all the service of the rectangular barn.

(Continued) page 140.)



The Sketch Shows the Idea of a Circular Carrier Track and How the Ropes and Pulleys Are Arranged, so as to Allow the Hay Fork to Pick Up and Drop the Load at Any Point Desired. The Guide Pulleys Keep the Shift Ropes Always Pulling in the Right Line of Force. This Design Is for a Barn With a Wing.

# Ransome

## leads

On two different jobs, out of a field of 7 different makes of mixers, the men who did the work chose the Ransome Bantam.

One job was an industrial housing project, the other a concrete warehouse. In one case, six different makes of mixers were on the ground. All were one-bag gasoline-driven machines. There was work for only one mixer and the men on the job chose the Ransome Bantam.

On the warehouse job there was a brand new mixer of another make, but the men who did the actual work chose the Ransome Bantam. From the contractor to the water boy, wherever men mix concrete, the verdict is the same you can't beat a Ransome Bantam.

Latest Bulletin No. 102 Sent Free.

### Ransome Concrete Machinery Co.

Main Office and Works:  
1764 Second Street, Dunellen, New Jersey

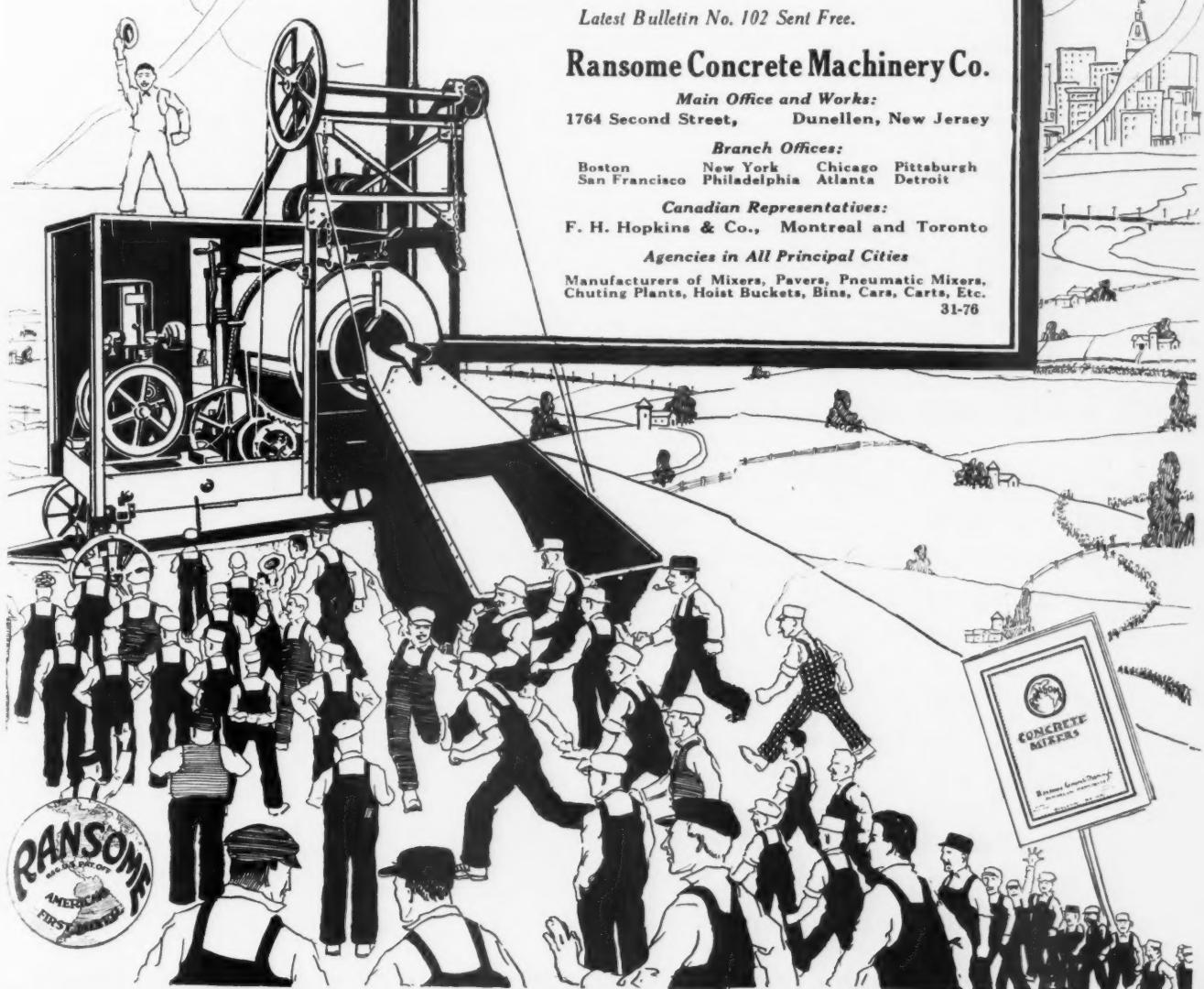
Branch Offices:  
Boston New York Chicago Pittsburgh  
San Francisco Philadelphia Atlanta Detroit

Canadian Representatives:  
F. H. Hopkins & Co., Montreal and Toronto

Agencies in All Principal Cities

Manufacturers of Mixers, Pavers, Pneumatic Mixers,  
Chuting Plants, Hoist Buckets, Bins, Cars, Carts, Etc.

31-76



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



# An Attractive Little Permanent Fire-Safe Garage

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*Use Coupon on next page for Free Floor Plan and Complete Construction Details*

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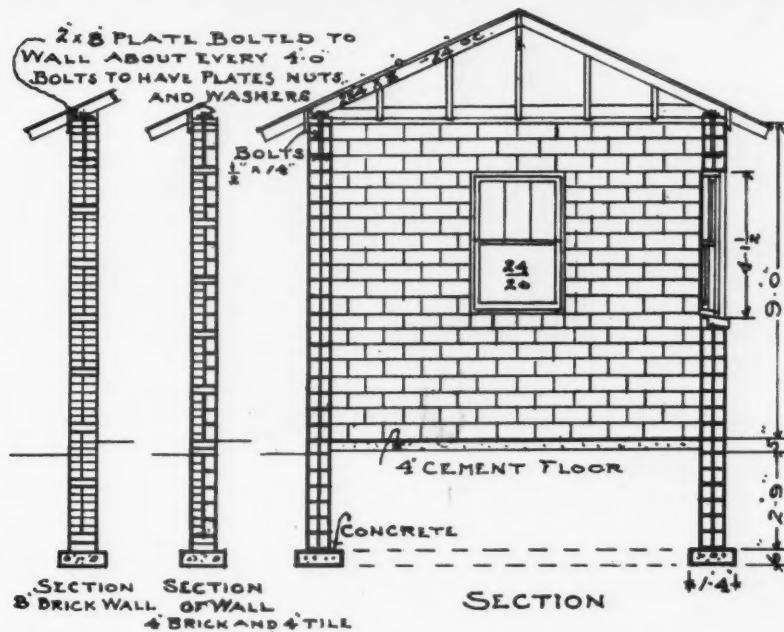
**Y**OU will have no trouble in getting that prospective garage builder to build this attractive little fire-safe garage if you will show him this plan and tell him about the many advantages of such a garage—absence of continual painting and repairing, reduction of fire-risk to a minimum and the protection of tires thro more even temperature both summer and winter.

This is an age of better things. The great building public is insisting on homes that are more permanent and fire-safe than frame. They are tired of paint and upkeep expense. They know houses and garages built of brick and tile make better buildings than frame. They are willing to pay the slight additional cost necessary in some parts of the country to build them.

Contrary to the general opinion, permanent fire-resistive construction costs little more than well built frame, and in ten years is very much cheaper when depreciation, painting and up-keep expense is figured.

When the readers of the "AMERICAN BUILDER" know how to estimate and use these modern materials and can buy them through their local lumber dealers, the brick and tile building will be the rule rather than the exception as it is today.

We believe there is not a reader of this paper who does not want to know how



## Note the Three Types of Wall Construction

to build permanently and fire-safe. If you do, write us fully about the things that keep you from doing so.

Hundreds of former Carpenter-Contractors are now building of brick and tile almost exclusively since they have learned how to estimate and use these materials. If you are planning frame buildings of any kind, start NOW to consider brick and tile instead. It will pay you. We will help you if you will write us.

**THE PERMANENT BUILDINGS SOCIETY**  
Chamber of Commerce, Chicago, Illinois

**MAIL COUPON NOW FOR FREE BUILDING PLANS**

**PERMANENT BUILDINGS SOCIETY, Chamber of Commerce, Chicago, Ill.**

GENTLEMEN: Please send me Free Floor Plan, details of construction of Fire-Safe Garage shown in June issue "AMERICAN BUILDER."

I am also planning to build \_\_\_\_\_

If you have never built of PERMANENT FIRE-RESISTIVE MATERIALS, please state reason.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Who is your lumber or building material dealer \_\_\_\_\_

(Your Name)

(Your Business)

(Your Town)

(Your State)

(Continued from page 136)

However, as this design is less familiar than that of the rectangular barn, it would be very wise in you to urge a client of yours who proposes building a round barn to work out the design, or have it worked out for him very carefully before he adopts it. It is easy to make a mistake in the case of a round barn, not only on account of the style of construction, but because country builders have not had the experience with this type of construction that would keep them on the right road.

We would be very glad to co-operate with you in seeing that a client of yours has the right idea, if you will put up to us the specific problem he has in mind.

We are sending you some pages from Mr. Radford's books, "The Book of Farm Improvements" and "Farm and Building Guide." They will give you considerable information.—THE EDITOR.



### Thanks, Brother, Thanks

To the Editor:

I am a charter member of your valuable magazine, the "AMERICAN BUILDER." It is the best of its kind I have ever seen. I look forward to its arrival every month and somehow I just can't stop taking it. It is fine for carpenters and contractors, both old and young. I have mastered work thru reading the AMERICAN BUILDER that otherwise I could not have accomplished.

Could write more in favor of your splendid magazine, but will not take up your time.

R. G. BRYAN.



### Comments on Our Make-Up

To the Editor:

Minneapolis, Minn.

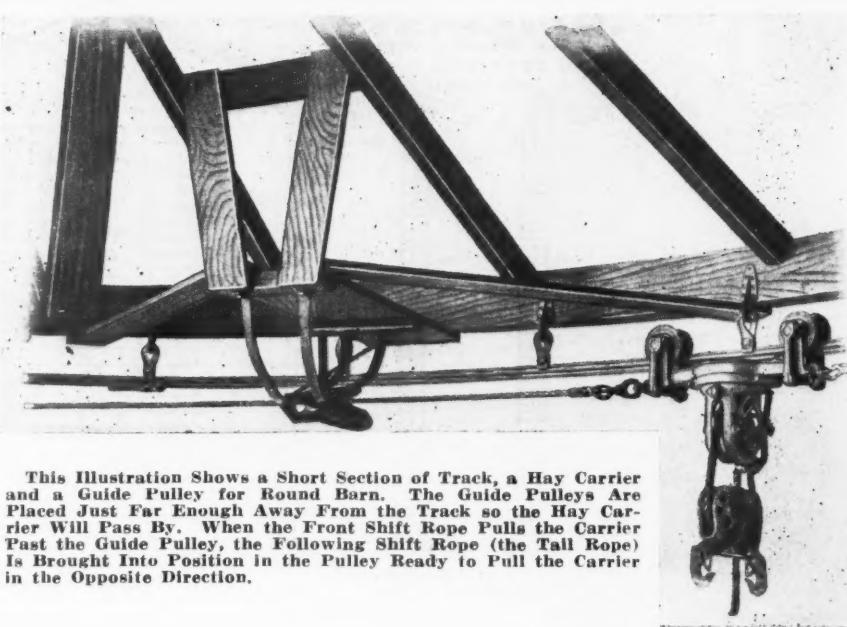
I am enclosing herewith my check for renewal of the subscription to the AMERICAN BUILDER, also the coupon for the subscription to your new publication, "Farm Mechanics," which I desire to have sent to my address as above given.

Being a charter member of your large family of subscribers to the AMERICAN BUILDER, I have seen it grow from its first issue to the present proportions, and am glad to take this opportunity to express my opinion in regard to a subject that I have long wished to see some one suggest thru the columns of your valued publication.

This has been presented in a very intelligent manner by Mr. H. H. Luke, under the heading "Here's a New 'Makeup' Idea for Publishers," at the bottom of page 74 in your March issue.

Mr. Luke is no doubt one of your readers who has, like myself, only the best interests of your publication at heart, but who thinks he has seen a chance for improvement in the manner of presenting the reading matter of the publication so that it would be more condensed and hence of greater value to your large army of readers, and especially those readers who desire to keep the current issues of the same for future reference.

As stated above, I have been a constant reader of your magazine since its first issue, and like a number of your other readers, I have on file all of the issues for reference purposes. The advantages of having the reading matter so presented that it can be preserved for reference at any time in the future, by having the magazine bound, is of inestimable



This Illustration Shows a Short Section of Track, a Hay Carrier and a Guide Pulley for Round Barn. The Guide Pulleys Are Placed Just Far Enough From the Track so the Hay Carrier Will Pass By. When the Front Shift Rope Pulls the Carrier Past the Guide Pulley, the Following Shift Rope (the Tail Rope) Is Brought Into Position in the Pulley Ready to Pull the Carrier in the Opposite Direction.

value to the man who is constantly in need of the many helpful hints and trade topics that are constantly being published in a trade paper, and I have no hesitancy in stating that I fully agree with Mr. Luke in stating that there is room for improvement in this respect in the publication of your magazine.

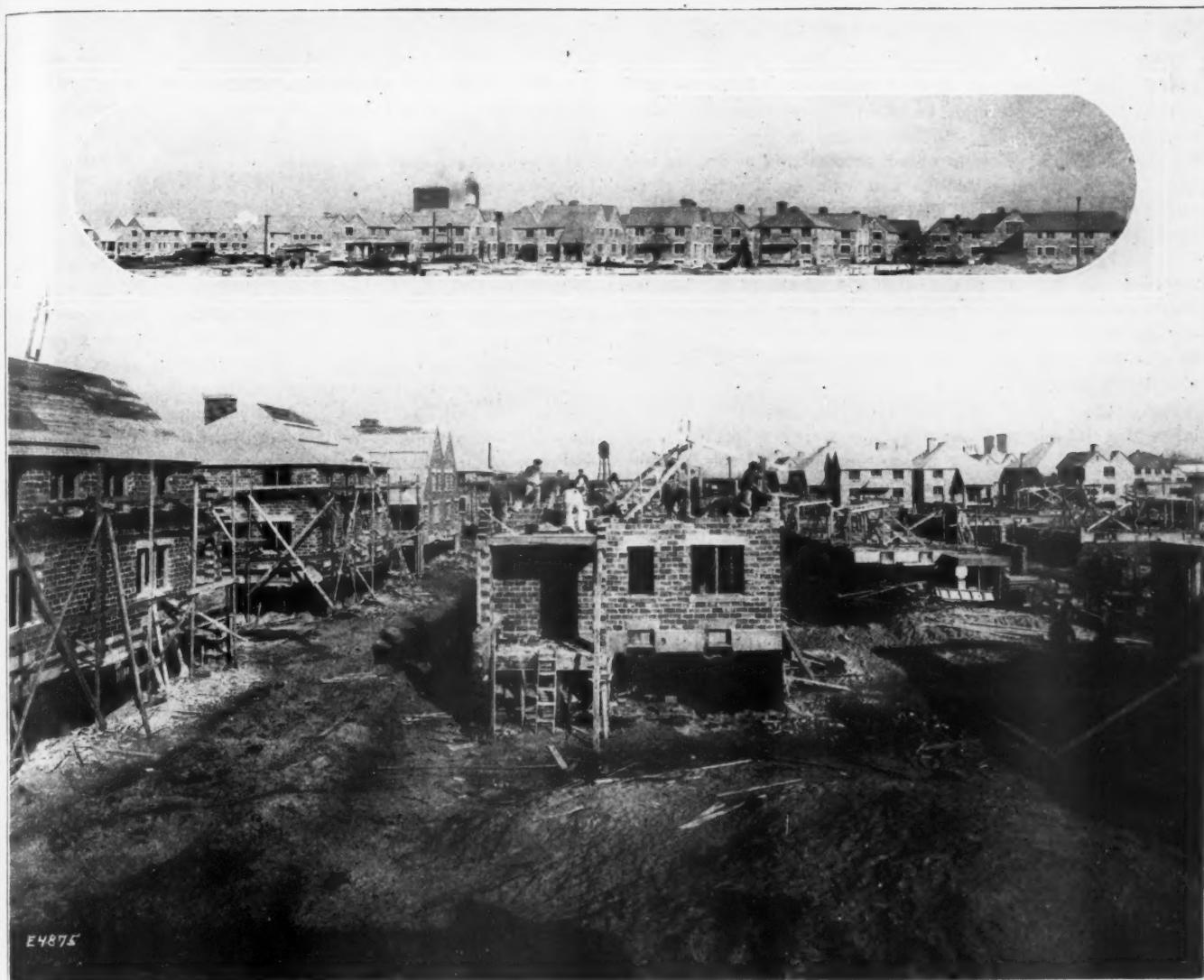
To be sure, you are catering not alone to the reading public but to the advertiser as well, and to make your service more attractive to the advertiser you are obliged to offer to him the apparent advantage of having his display advertising appear in the most conspicuous places in your magazine.

This may appear to be a distinct advantage, but there is also another side to the question that the average reader does not stop to consider, that is the fact that when anyone who is really looking for a certain article which he wishes to buy he is obliged to look thru the entire magazine and ferret out the particular "ad" which he knows is there, but where?

This is a real handicap to the man who is desirous of getting in touch with some one of your various advertisers and who has only a limited amount of time to spend in looking thru your pages to find the "ad" he is looking for.

To be sure, your advertisers are all indexed, but we will take a concrete example and say that a man who desires to purchase a certain tool or other implement, without having any preference for any one manufacturer, or in fact without knowing the name of the manufacturer, wishes to get in touch with any one, or with several of them. He is either compelled to turn thru the entire magazine to find the one he wants or write to you for information as to where to find what he is looking for, which is all very well if a man has the time to spare to do this; but if he is in a hurry to find the thing he is looking for he will probably do neither, but will seek other sources of information.

I am speaking from experience, as I am connected with a firm dealing in a number of the commodities that are regularly advertised in your publication, and have had the above mentioned difficulties in trying to find a certain "ad" more than once. Being employed in the purchasing department, I have had occasion to write to various advertisers, or to furnish information to others who desired to write to them, and it is the inconspicuous advertiser that I am speaking of particularly at this time, the one who has always carried an



VIEWS TAKEN DURING CONSTRUCTION OF 240 HOLLOW TILE HOUSES FOR THE MARK MANUFACTURING COMPANY, INDIANA HARBOR, IND

*"From our experience the hollow tile house is the one style of house that should be built."*

—Wm. Adams, Pres.

CONTRACTOR ADAMS FOUND  
**HOLLOW BUILDING TILE**  
 Best and Lowest Cost Construction for 240 Houses

**WILLIAM ADAMS COMPANY**  
 Contractors and Builders  
 867 The Rookery, Chicago

THE HOLLOW BUILDING TILE ASSOCIATION, 1409 Conway Building, Chicago.

GENTLEMEN: Yours of recent date received regarding the building of workmen's houses which cost in the neighborhood of \$2500 to \$4000.

We have just gone through a very strenuous time in figuring out the most economical house, for a manufacturing concern in this part of the country, and in arriving at our figures we figured frame, brick, concrete and hollow tile with the result that hollow tile houses on concrete foundations could be built just as cheap as frame houses.

In addition to the economy of the original cost there is also to be considered the question of economy of upkeep and insurance. The insurance rate is very much lower on a tile house than on a frame.

Then we found quite a credit again by putting on asphalt shingles on the roofs instead of wooden shingles.

The results of our entire operations in this matter is clearly in favor of the hollow tile house, as the original cost is no more, the up-keep is very much less and the insurance is on a better basis than on a frame house.

I can without hesitation to any who are interested in building such houses that from our experience the hollow tile house is the one style of house that should be built. Yours very truly, WILLIAM ADAMS COMPANY, (Signed) William Adams, President.

If you are planning houses—1 or 1,000—Contractor Adams' experience will be of value to you. Hollow building tile construction is rapidly coming to the front for all classes of buildings. You should know how to estimate and use it and where it can be obtained.

**THE HOLLOW BUILDING TILE ASSOCIATION** 1409 CONWAY BUILDING  
CHICAGO, ILLINOIS

"ad" in your paper if only a very inconspicuous one.

Your publication being, strictly speaking, a trade paper, appeals only to a certain class of people—that is, to the carpenter, builder, contractor, architect, superintendent, cement worker, or others interested in building in general—who is usually subscribing to it to obtain information along the line he is ordinarily interested in and who does not read the same, as regards general advertising, as the general public would. Hence it is not to be compared to the "Saturday Evening Post" or other publications of the same nature, which appeal to the general public, and which, except in rare instances, are not kept for reference, but only for the general reading matter of the type they contain, to be discarded as soon as they have served this purpose and not kept for filing for future reference.

Personally I think that Mr. Luke has opened up a very interesting subject and one that should appeal to the trade in general, as I should like to see some more of the opinions held by the boys who are reading your valuable publication and who derive the most benefit from it by reading the articles you are publishing and then filing this information away so that it will be available for future reference.

To be a permanent success a magazine of the nature of yours must carry an appeal to the trade who subscribes to it, and the bigger you can make the appeal to that trade, the bigger and better you can make your magazine in every way, the richer will be your reward.

We cannot all attain the goal of our ambitions, and to expect to issue a magazine that will be the ideal of the entire public is almost, if not quite, impossible.

However, you have expressed a desire to give the readers of your magazine a fair chance to express their views, and I am only offering my own opinion in the hope that there may be enough of the readers who think likewise who will come forward and express their preference.

By this means alone can you determine the feeling of the trade on the subject, and as it is the readers, after all, that make a publication what it is, disregarding the fact that it is the advertiser that pays the best, you must cater to the reading public as well as to the advertising public, for without the support of the readers your advertising would be useless.

Let's all get together and make for a bigger and better AMERICAN BUILDER, the ideal of the craftsman, artisan, workman, or apprentice, and likewise the medium of placing the advertising where it will do the most good, whether this is in the reading matter or the classified form where it can be separated from the reading matter by those that desire to have their reading matter so published that it can be filed for future reference.

If you are willing to put the question to a vote among your readers and abide by their decision I believe you will be doing us all a very great favor and that it will eventually work out to the good of all concerned.

Thanking you for the opportunity of expressing my own personal views on the matter and trusting that I may have the pleasure of helping you in some small way with the many complex problems that are forever coming up in the editing of a truly helpful and enlightening publication, I am,

Sincerely yours,

CHAS. B. FUNK.



### Estimating Carpenter Labor

To the Editor:

La Fargeville, N. Y.

I send the following in answer to a question in the Correspondence department, by V. E. Clow, on estimating carpenter labor.

The estimating of carpenter labor is more or less difficult

because of the varying conditions which may exist. Some parts of a building are readily estimated by the square, that is a space 10x10 feet, or 100 square feet, on the floor or side of a house. It does not need to be of these dimensions, it could be 2x50 feet.

To find the number of squares in a surface, multiply the two dimensions together and point off two places. Taking an ordinary house 24x30 feet, we get 720 square feet or 7.20 squares, or 7 1-5 squares.

Figure the framing of floors at \$1.50 per square, based on 60 cents an hour for labor. Now 7.20 squares at \$1.50 comes to \$10.80, and will mean 18 hours at 60 cents. To check up and see if we are anywhere near right, let us figure another way. A square of flooring for a house takes from 133 to 167 feet of joists, board measure, depending on whether 2x8 or 2x10 joists are used. So the 7.2 times the average of these gives something over 1,000 feet in the joists of this floor, and we found it would take 18 hours to frame and place them. It is estimated that a man will cut and place about 500 feet of joists in a day, so our figures seem about right. You will note that we use the same figures for all plain rough work, such as joists, studs, common rafters, rough sheeting and floors. The last two may be planed and matched, it does not matter much. The idea is that a man will use up and put into the building about so much lumber per day on rough work. The higher it goes and the more it must be cut, as short rafters and roof boarding, the less he can use and we figure it accordingly, as the following table will show:

Framing floors	\$ 1.50	Framing ceiling	\$ 1.20
Laying floors	2.25	Attic floor	1.50
Rough floor	1.50	Outside walls	1.50
Sheathing walls	1.50	Siding walls	2.25
Smoothing floors	2.25	Framing roof	1.50
Sheathing roof	1.50	Framing porch floor	1.50
Framing porch ceiling	1.50	Framing porch roof	1.50
Ceiling porch	1.50	Laying cornice, lineal foot	.25
Porch cornice, lineal foot	.45	Dormer cornice, lineal foot	.30
Outside base, lineal foot	.10	Bay window cornice, lineal	
Picture mould	.02	foot	.30
Cased openings, \$15.00 to	20.00	Porch rail, ballusters, 50	
Attic stairs	10.00 to	feet	.23
	15.00	Inside base, lineal foot	.09
		Plate rail	.09
		Finishing doors, each	.25
		Front stairs, \$40.00 to	.50
		These last depending on conditions.	

If it is desired to figure at some other rate than 60 cents say 65 cents per hour, you simply add one-twelfth to the prices given per square, because the 5 cents more is the one-twelfth of 60, or add one-twelfth to the total obtained by multiplying. If it is desired to figure at a lower rate, say 55 cents deduct one-twelfth.

Another way is to figure out how many days' work there will be according to the following estimates as to what a good workman will do on an ordinary building in eight hours, which is frame, and place about 500 board feet of joists, studs or common rafters.

Put on about 400 feet of sheathing on walls.

Put about 500 feet of boards on roofs or rough floors.

Put on about 250 feet of clapboards.

Lay 300 feet of common flooring, less if narrow.

Fit and hang ten 2-sash windows.

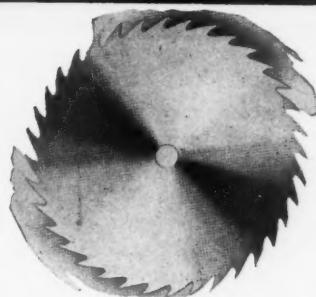
Set and fit eight window frames.

Hang eight ordinary doors.

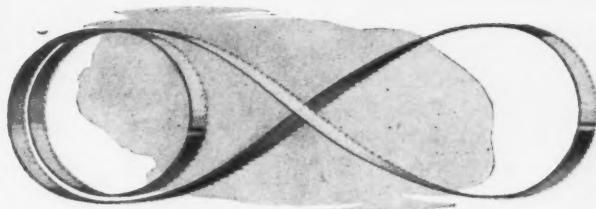
Some will figure up the amount of rough lumber and allow about \$15 per thousand feet for framing and placing it, and 40 per cent of the price of the millwork for fitting and placing that.

Another way is to take the total cost of the lumber and millwork and allow half of this for the carpenter labor. But these are simply snap estimates and should not be used except as a check or proof of the amount obtained by figures.

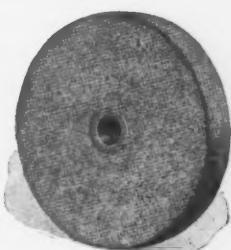
JOHN UPTON.



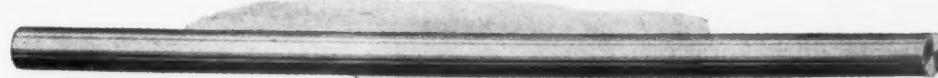
Circular Saws



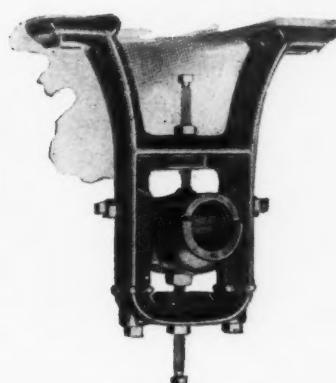
Band Saws



Emery Wheels



Steel Shafting



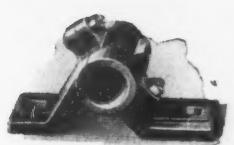
Hangers



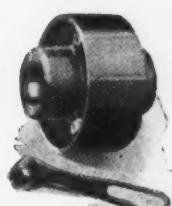
Pillow Blocks



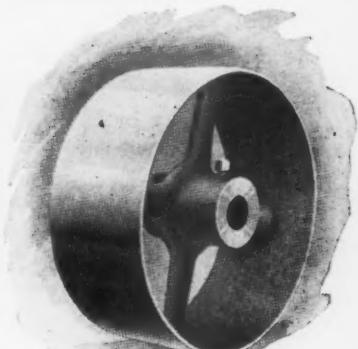
Collars



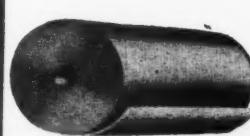
Post Blocks



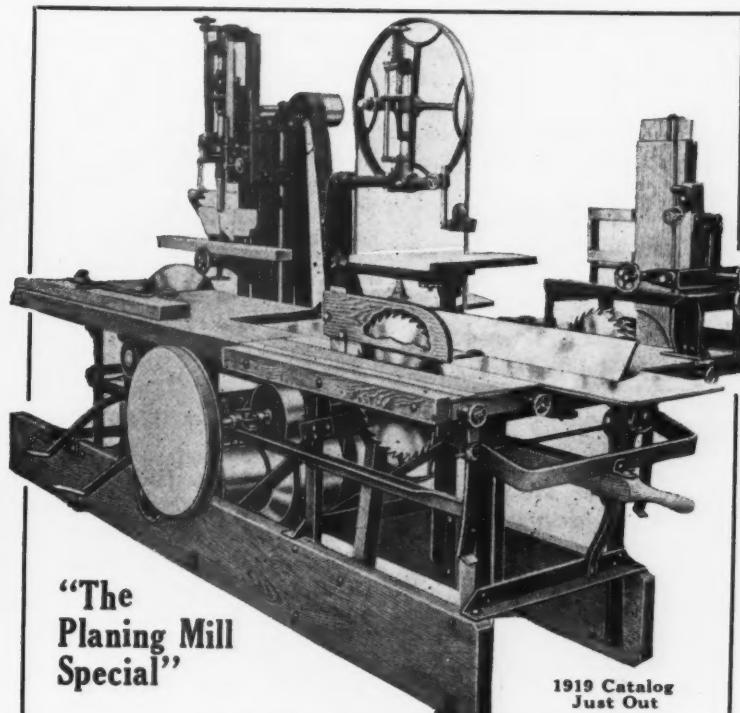
Couplings



Pulleys



Sandpaper



**"The  
Planing Mill  
Special"**

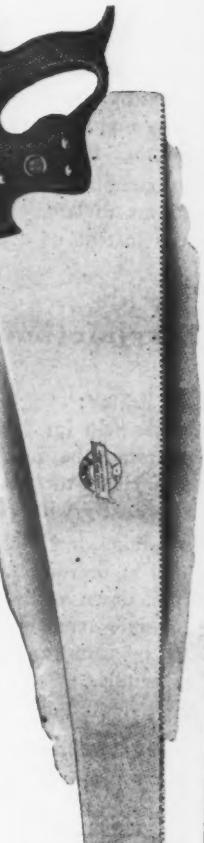
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Saws  
All Styles

**Regarding a Number of Questions and Things**

To the Editor:

LaFargeville, N. Y.

In looking over the March number, I notice an article or letter in correspondence by K. A. Westholm which looks good, and I notice that his figures agree with mine for the same cuts.

"Klima says it won't work," and I bet it will if you build a fire in the alley behind the cows so as to get the hot air started up. Our stove pipe runs horizontal and works quite well.

I had something on estimating or figuring labor costs to answer V. E. Clow, but the Gold Stripper rather got me. Then I see that A. J. Metz wants something in this line, so it depends on the weather. I have been thinking about some articles along the lines given by Metz, and if I get time will send some.

J. Eilden has some good ideas too. Let us see the bones, etc., without the outer covering.

As to the changes mentioned by H. H. Luke. How would it do to let each article be completed where started, then followed by another, unless too close to bottom of page, in that case use fillers. Then have the ads on one side of the page and the reading on the opposite. Of course, there may be objections to this way and reasons why it cannot be done. I am not a magazine builder, or at least not a builder of magazines, and I don't know, but it seems to me it would suit the man who wants to cut them up and the one who only reads them and lays them aside.

JOHN UPTON.

**A "Rub" for Bricklayers**

To the Editor:

Chicago, Ill.

Sometime, give the bricklayers a gentle rub on the lack of mortar (in brick houses) around the door and window frames. Masons should "push" a good pile of mortar against the frame when laying brick. I have a window which "took water" around the frame during a driving rain on a recent Saturday night. Instead of attending church Sunday, I calked around that frame with cotton.

This complaint has become more frequent of late years, and seems to be a result of our method of doing things—quantity instead of quality production.

L. HABERMAYER.

**Easy Method of Removing Finishing Nails**

To the Editor:

A little help for pulling nails out of finishing lumber without marring the face. I have seen fellows use pliers and even pinchers to pull finishing nails out backwards, where it is very easy with even a dull hammer to pull them.

First take your piece of lumber and bend the back end of the nail in the direction towards the lower end of the board and pull down with hammer. The bend in the nail prevents the hammer from slipping. This also works very easily with spikes, by using any size hammer with a claw, and it saves many handles.

A SUBSCRIBER.

**Another Method of Removing Varnish**

To the Editor:

Swartwood, N. Dak.

I have read with interest the various answers to John DeVries' question in the December issue. As I didn't start taking your magazine until January, I don't know for sure what his question was. However, I would judge that it pertained to removing varnish, etc., from old work before applying new varnish.

I herewith give a method I have used with much success in several instances. It is taken from the "Scientific American Cyclopedia of Formulas," which is a book it will pay anyone engaged in the building trades to have on hand.

Make a strong solution of caustic soda and apply to the surface hot, using a cotton or hemp swab as a brush would be eaten up and it does not affect cotton. The surface can usually be wiped clean with a cloth. In fact, I never have used a scraper yet. When the wood is clean, wash well with water. This will darken the color of oak, but if this is objectionable, wash the wood with dilute muriatic acid, cleansing with water again as soon as the color is satisfactory. Then wash with a weak solution of common baking soda to neutralize any traces of acid. In applying the acid, use a bristle brush—one that is *not* bound with iron, as cotton or wool are eaten by the acid and it eats iron.

I wish also to caution about having tools near when the acid is being applied, as the acid vapors attack any metal and for that reason, whenever practicable, the work should be done in the open. This is possible only in the case of furniture.

Do not wear any woolen clothes when applying the soda solution, as that will also leave its marks, in the form of holes, if a drop should get on them. Wear cotton or linen.

Altho a new subscriber and practically a novice at building work, I have done quite a bit of varnishing and painting.

Don't intend to be without the AMERICAN BUILDER in future.

Hoping these few remarks may be of help to some Brother Craftsman, I am,

W. EARL RUGG.

**Here Are Two Tips from a Carpenter**

To the Editor:

Elmira, N. Y.

I send you a couple of methods I use in my work, if they are of any value to you.

First, when you wish to break a chimney tile or any tile, take sand and tamp it down inside till it comes up to the place where you wish to break it. Then take a cold-chisel, cut it around, striking it lightly and going around it till it breaks. You can cut it square, so you can use both pieces.

When I wish to cut thru for a door or window, I start with a common saw (instead of boring thru with a bit and starting with a small saw) using the point of the saw till I get thru so I can use the full length of the saw.

A. CARPENTER.

**Wants Plans for an Implement Shed**

To the Editor:

Minneapolis, Minn.

In some future issue, I would like to see blueprint and drawing of a practical, moderate cost implement shed for farm machinery. The high cost of machinery for farm use demands some cover for them more than ever, especially one large enough to take care of tractors and an ordinary assortment of implements.

F. J. KUEHN.

**How Is the Price of Labor on a Building Figured?**

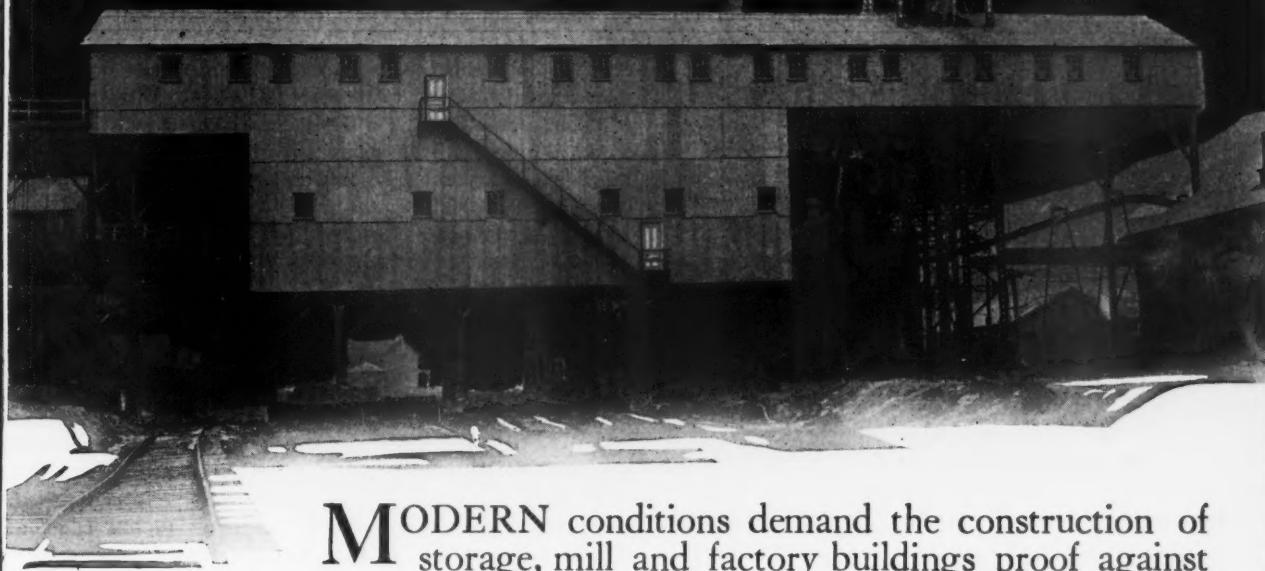
To the Editor:

Linden, Ind.

In figuring on work by contract, what general plan or basis is used in estimating what the work on a building is worth?

For instance, say the building material for a certain job costs \$1,200. What ought the work be worth? Do you figure from a percentage of the cost of material, or is it a rule to figure to get all you think you can get for the contract?

# An Armor against the attacks of Fire and the elements



MODERN conditions demand the construction of storage, mill and factory buildings proof against destruction by fire and deterioration through the action of the elements.

When AMBLER ASBESTOS CORRUGATED ROOFING AND SIDING are specified, these vital requirements are met.

Made of the best Portland cement, strengthened with long, strong, Asbestos fibre, it forms a building material ideal for protection against fire and the elements.

More durable than iron as it will not rust, split, curl or break.

More economical than wood as it will not warp, crack or rot.

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Practically indestructible.

## A Better Skylight

We advise the use of our ASBESTOS CORRUGATED WIRED GLASS for SKYLIGHTS.

Easily applied as the corrugations exactly fit the corrugations of Ambler Corrugated Roofing and Siding.

Economical because no frame work is required nor special labor.

Leakless because of the method of overlapping.

Permanent because there are no joints opposed to the slant of the roof that in other skylights form pockets or warp and allow the water to seep through.

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Manufacturers of Ambler Asbestos Shingles, Asbestos Corrugated Roofing and Siding,  
85% Magnesia Pipe and Boiler Covering and Asbestos Building Lumber.

If you have a regular plan of estimating the cost of work, I would be pleased to learn what it is.

T. H. WILSON.



### What Will Stop Discoloration of Chimney -

To the Editor:

Edinburg, Ind.

I have a chimney on a two-story brick house from which a black liquid substance comes, running down the walls and discoloring them. What can I do to prevent it? The chimney opening is 8 by 12 inches, and the chimney comes out in comb of the roof, with nothing to obstruct the draft. I burn soft coal. I have inspected the chimney, but can find no cracks. It just seems to come thru brick or mortar joints.

What effect would a cap over chimney have, if any?

A. M. CANDELL.



### One for the Concrete Sharks

To the Editor:

Carbondale, Ill.

By the way, you "Old Concrete Heads," try this in your drum mixers:

Instead of loading in sand, stone, cement, and water in the order named, as per old standard specifications, put in approximately the full amount of water, then cement; then let drum make a couple of turns and give it the rest of the batch. Possibly this system would be impractical with a big automatic or power loader, but where the cement is put in by hand and the stone dumped from wheelbarrows, the saving in time is something to figure on. As the cement and water mix at once into thin "soup," which gets to every part of the batch almost by the time the last stone or piece of aggregate is in, and as a thoro mix means getting your cement to all parts of the batch, therefore, you are certain if the "batch" is wet thru, that it is also mixed, as where the water goes it must carry cement. This is not true of mixing done any other way, and I find it saves one-half the time over trying to wet up a batch of dry stuff with a hose or stream of water from a tank or pump.

The reason I mention this is that I have never seen it advocated in any literature on cement work, and as far as I am personally concerned, it is original with me; and I have proved to my own satisfaction that on the small mixer it is not only a time-saver, but gives the most uniform mix. If you think it worth while, you can pass the idea along.

With best wishes for your prosperity in the future. I am

T. E. KLINE.



### Regarding the Plans for a Motordome

To the Editor:

La Fargeville, N. Y.

In regard to that motordrome or bicycle race track which L. S. Prince asks about in the February AMERICAN BUILDER I wrote to one man who I thought might be able to help some and received the following:

"The problem of the race track is so far from anything within my experience that I don't think I can be of much help to you."

I should think that you could start with a width determined by the number of machines that might run abreast at any time, divide this into eight or ten sections; calculate for each section the centrifugal force of the rider and machine at the speed assumed for that section, and from this the angle, which the machine would have to make, with the horizontal to keep the resultant forces (gravity and centrifugal) acting toward a point in the line of the wheels and slope the track in that section at right angles with the

machine. It occurs to me unless the track is circular, it may be dangerous. To ride onto the banked curves from a level straight way would require great skill, unless the track were excessively wide.

This is all right as far as it goes; but one needs more. I would think the best thing would be to write the makers of motorcycles, and find someone who has built such tracks and can give the actual figures used.

JOHN UPTON.



### How to Estimate on Matched Board Flooring

To the Editor:

Easton, Pa.

I hereby submit my exact rule to estimate on flooring of matched boards:

Find the number of square feet wanted and for loss in matching, divide by twice the face size of boards. For example, if the flooring is 2½-inches face (3 inch) divide by 6. If 3½-inch face (4 inches) divide by 8. If 5½-inch face (6 inches) divide by 12, and so on, any width. This, of course, does not allow for waste.

I will be pleased to explain this rule in your Correspondence department, should any of my brother readers doubt its correctness.

FORREST REICHARD.



### Some Ideas on Filing Magazine Clippings

To the Editor:

La Fargeville, N. Y.

"H. L." asks in the March issue about filing clippings, etc. This is some little problem when it includes magazine pages and clippings of all sizes. When the sheets are all of two or three sizes and there is some uniformity, one can use the vertical filing cabinets in which they all go on edge, arranged alphabetically. There are also letter filing cabinets in which the sheets lie flat, but with miscellaneous clippings these would not work so well. One can put the clippings in envelopes or between covers, as suggested. Another way is to use drawers 9x12 inches and 3 inches deep. This is like the catalog section of a filing cabinet. Or one could use the bellows or box letter files, keeping them on shelves or in drawers.

I have found that some shelves, three feet long, a foot wide and three or four inches apart, make a good place to keep envelopes of clippings. There is a drop leaf or door which lets down or closes to shut them up. If one could get a number of pasteboard boxes of uniform size, these could be used for containers and kept in drawers or on shelves. I use those in which typewriter paper comes. They are 9x12 inches, 1¼-inch deep. But a box takes as much room partly full as when full, while an envelope will only take space according to its contents, and the same with a bellows or expanding letter file, which is good for some work.

Where one has large sheets and drawings the best way seems to keep them flat in shallow drawers. The legal blank section of a file has drawers about 15 inches wide and 11 inches deep, which would be right for 10x14-inch paper.

This problem of filing clippings, magazine pages, catalogs, drawings, etc., so as to find them when wanted and add to them readily, is a puzzle to most of us.

JOHN UPTON.



THE fundamental basis of prosperity and contentment is the widest possible diffusion of ownership of homes among the people of any country.

At this particular time the resumption of building operations on a large scale would be extremely stimulating to industry and would go far toward stabilizing the general economic and industrial situation.—W. G. McADOO, former secretary of the Treasury.

# Sterling

Wheelbarrows  
Always Make Good

Service  
Extends Everywhere

The Sort of Wheelbarrows that are Pacemakers.  
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STERLING ON A WHEELBARROW MEANS MORE THAN STERLING ON SILVER

Milwaukee



Wisconsin

# Selling the Farmers the Idea of Building Silos

RURAL CONTRACTORS CAN SHOW THE FARM OWNER HOW MUCH PROFIT THERE IS IN A SILO, THUS GETTING BUILDING JOBS

**A** CONTRACTOR and builder who was thoroly convinced of the profit-making possibilities for the farmer in a silo happened by a farm about corn harvesting time. He astonished the farmer by offering him \$40 an acre for the corn stalks. Of course the farmer was skeptical about the sanity of

This gave the builder an opportunity to sell that farmer the idea of building a silo, and his arguments were so sound that he got a contract.

The average acre of corn will produce 10 tons of ensilage. Ten tons of ensilage will save about two tons of hay in feeding cattle in the winter time. There is an active demand for hay at \$20 per ton. There is no demand for corn stalks. Thus by substituting ensilage for hay as cattle feed and selling the hay, every acre of corn stalks is worth \$40 to a farmer—providing he has a silo.

These are not merely figures imagined by a salesman—they are figures that are based on the experience of thousands of dairy farmers who have kept the records of the cost of feeding cattle and the amount of feed cattle consume. They make unanswerable arguments for the builder to use in selling silos to farmers.

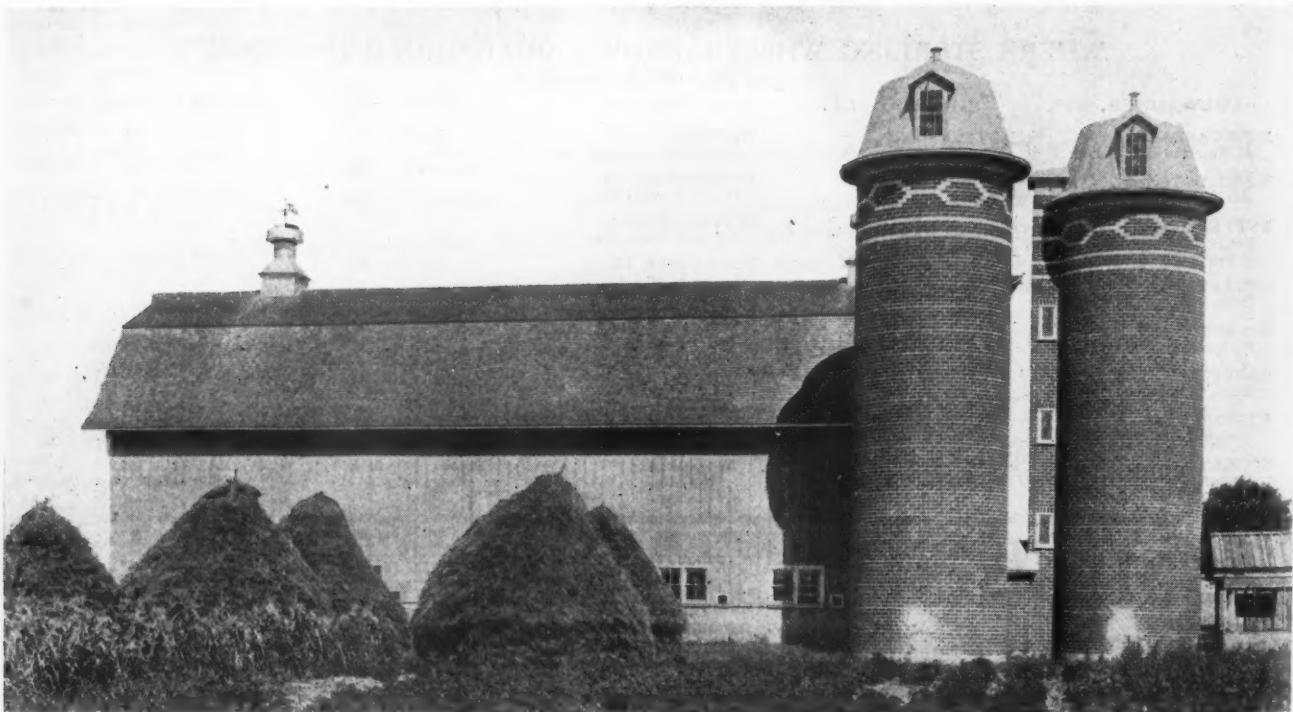
Silo building has long since passed the experimental stage. Now there are available plans for the construction of all types of silos—wood stave, cement stave, brick, hollow tile, and concrete silos. The makers of silo fittings and the manufacturers of silo building materials, all have worked out and tested silo building plans. These may be had from the manufacturers for the asking, together with expert instruction in silo building.

Accompanying this article are illustrations showing four popular types of silo construction. They are the hollow tile, brick, concrete stave and wood stave. There are thousands of these silos scattered thruout the



Here Are Two Wood Stave Silos on a Farm in the Fox River Valley, Ill., Where This Type Is Popular.

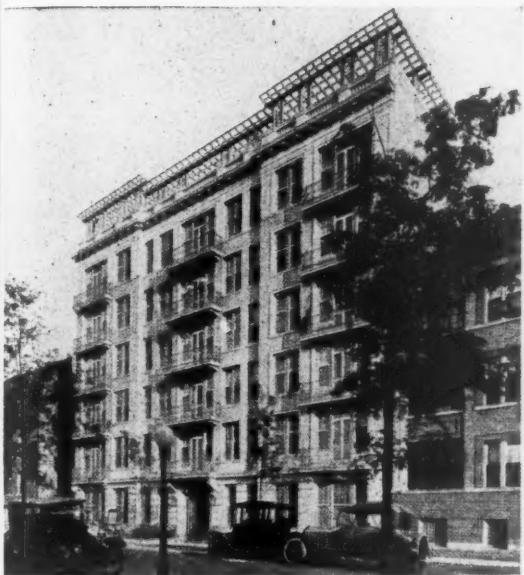
the builder, but when assured that the offer was in earnest, at once took the contractor up.



Wisconsin Is the Home of the Brick Silo. Here Are Handsome Twins on the Farm of E. H. Turner, Albany, Wis.

# Build Apartment Hotels!

Apartment Hotels are today producing bigger dividends than any other form of real estate. Builders who understand this work can make big profits for themselves and splendid investments for the owners.



## You

can build apartment hotels on cheap property as well as expensive. The demand for such accommodations is tremendous.

The investment need not be a great deal more than an apartment building.

This type of building is growing by leaps and bounds. It behoves every builder who wants to reap his share of patronage to be well informed on the subject.

The book shown at the side of the page, carefully read, will make you an absolute authority on the subject.



## THIS BOOK SHOWS YOU

in clear, condensed form everything that you can possibly want or need of apartment hotels.

It contains photographs of fifty modern apartment hotels in different parts of the United States. It gives a typical floor plan of each building shown.

It explains the selection of location: necessary service, and rentals. And, in short, gives you all the information there is to know so that you can authoritatively answer any questions your clients may ask.

Mail  
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Coupon  
Today

This invaluable volume should be added to your list of important building books. It is de luxe bound in three colors, printed on beautiful enamel stock.

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without question if the book does not satisfy!

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(Incorporated)

ESTABLISHED 1882

INVESTMENT BONDS

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Mr. Robert C. Cash, Publisher  
729 Continental Bank Bldg., Chicago, Ill.

Dear Sir:-

Your book on modern apartment hotels meets an increasing demand for such a reference work. This type of building has been very successful, and to date no data has been collected in connection with the design, arrangement and planning of such buildings.

Any investor in real estate, any architect who is commissioned to design such a building and any real estate man or builder who desires to promote such a proposition, should, in my opinion, have a copy of this book in order to know these buildings, representative of this type.

We are interested in knowing that such a publication will be distributed. These buildings will fulfill a real demand in practically every large city of the country.

We assure you of active and full co-operation, and we highly approve of your conception of the character and contents of this book. If we can be of any further assistance, do not hesitate to call on us.

Very truly yours.

S. W. STRAUS & CO.  
(Signed) Thomas D. Collins.

## ROBERT CARROLL CASH, Pub.

729 Continental & Commercial National Bank Building, Chicago, Ill.

Send me your book on Apartment Hotels, which includes pictures and plans of buildings by the country's most successful architects. I am enclosing \$5—the full price. But if the book does not please me I will return it and you will give me my money back.

Name.....

Street.....

City..... State.....

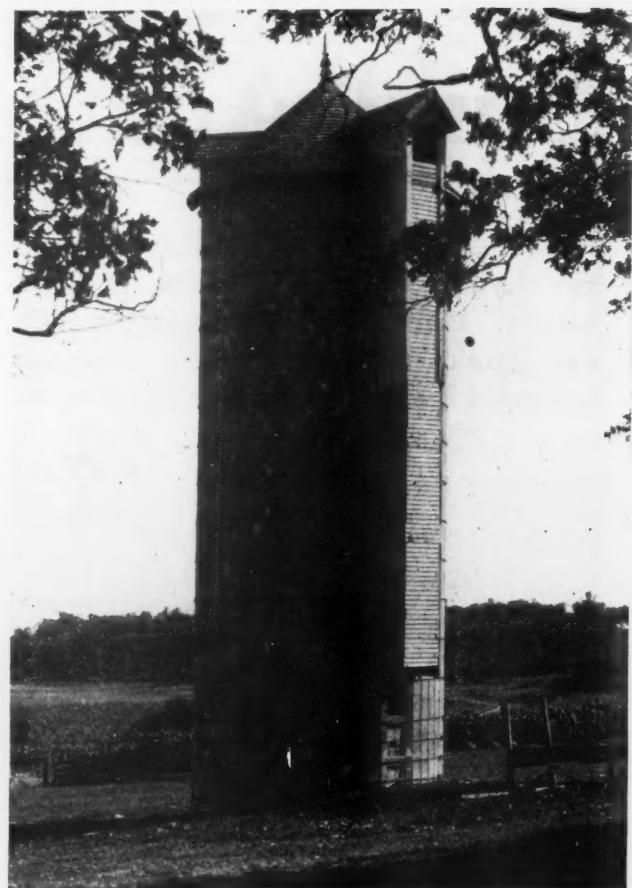
country and the farms on which they are found are owned by progressive and successful men, which leads to the thought that a silo is a valuable acquisition for every farmer.

The number of farmers who are adding to their



A Fine Pair of Hollow Tile Silos on the Farm of R. S. Olds, Grosse Point, Mich. These Silos Are 12 by 40 Feet.

dairy herds is increasing every year. They have learned thru their own experience and the experience of others that in order to keep the soil of their farms



Concrete Stave Silo in the Field for Late Fall Feeding.

in a highly productive condition what is taken from the soil must be put back into it. The fertilizer a herd of cows produces is worth much in supplying fertility. And every dairy farmer needs a silo, if he is to conduct his business in the most profitable way.

Builders who erect farm buildings have great opportunities in silo construction. No matter what type of silo his client wants he can supply it, thru the co-operation he gets from the silo designers.

## How to Build the Concrete Floor of a Water Tank on Top of a Silo

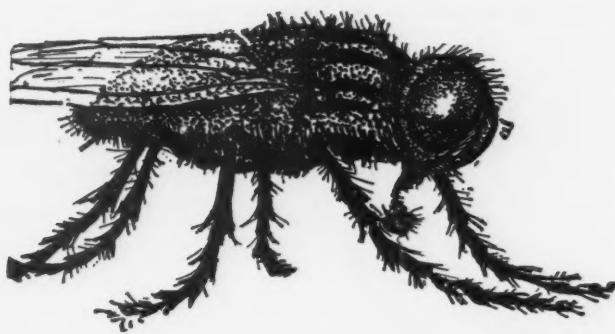
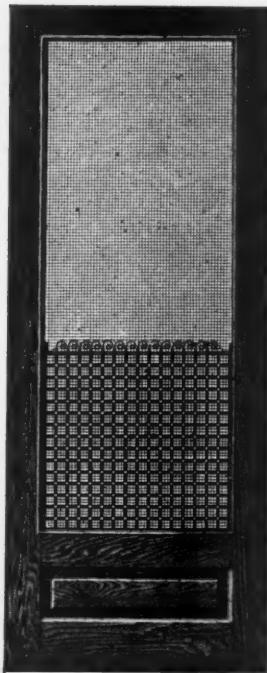
THE progressive farmer, who is conducting his farm in the modern economical and efficient way houses his livestock in a weatherproof and well-ventilated barn, feeds the animals in the winter on ensilage and keeps them supplied with fresh water, piped to the stalls. These demands have brought to the rural builder many problems in construction. One of them is the erection of a tank for the water supply on top of the silo.

The water tank on the silo has many advantages over the tank set on a frame. It can be built at the same time as the silo, thus saving a part of the cost, and as the silo is usually located near the barn, there is a smaller cost of piping the water into the building. Also there is the saving of the space the separate tank

would take up. Besides the appearance is better.

There are two types of silos especially adapted to support a water tank. They are the hollow vitrified tile silo and the concrete silo. The walls of the tank on these silos are of the same material as the silos themselves, the only difference in the exterior appearance being the concrete tank floor, which is built thru the walls.

The floor of the tank is one of the important features of water tank construction. Herewith is shown details of the reinforcement needed in a tank on top of a 14-foot silo. The walls of the tank, also, need special reinforcements. Makers of silo materials supply plans and details for both the silo and the water tank. From these the builder can give his client the



*When a Fly Comes in  
Thousands of Disease-  
Germs Come With Him*

# Screen NOW



One fly now means thousands of flies later—hundreds of thousands of germs! Stop that first fly now! Don't wait to swat flies—stop them!

CONTINENTAL screen doors and wood frame adjustable window screens are made in all sizes to fit any opening. Continental and Sherwood screens are made by the world's largest screen manufacturers.

SHERWOOD all-metal screens are adjustable and are made in sizes to fit any window. They are permanent and need not be removed to raise or lower window.



## *Continental* Screens

Sold by Leading Department Stores,  
Retail Dealers and Wholesalers

THE CONTINENTAL CO., DETROIT—Distributors



right sort of materials, properly reinforced.

Because of the diameter of the silo, the tank does not have to be high to hold all the water that the barn, outdoor water tanks and the farm home require. The water is forced into it by a pump operated either by a gasoline engine, electricity or the windmill. The height of the tank supplies the necessary pressure.

There will be a great deal of silo building this year and the contractor who suggests so placing the water tank will give his client an extremely useful and satisfactory job.

#### “Get ‘Em Envious and You’ve Got ‘Em”

(Continued from page 110.)

all. But they’re beginnin’ to see the light.

“And say, why don’t you make it your business to tell these facts to all these out-o’-date farmers that come in here? You and Sam Edwards, the contractor, and Ed. Maple, the lumber man. You’re the fellows that will profit and you’re the fellows that ought to do the missionary work.

“And right here, let me give you a little advice. Don’t tell ‘em what they ought to do; tell ‘em what some of the men that are gettin’ along prosperous-like are doin’. As I said, they’re a jealous lot, and the less progressive they are, the more jealous they are. Get ‘em envious and you’ve got ‘em. And when they see how much easier they do their work and how much more money they’re makin’, they’ll thank you.

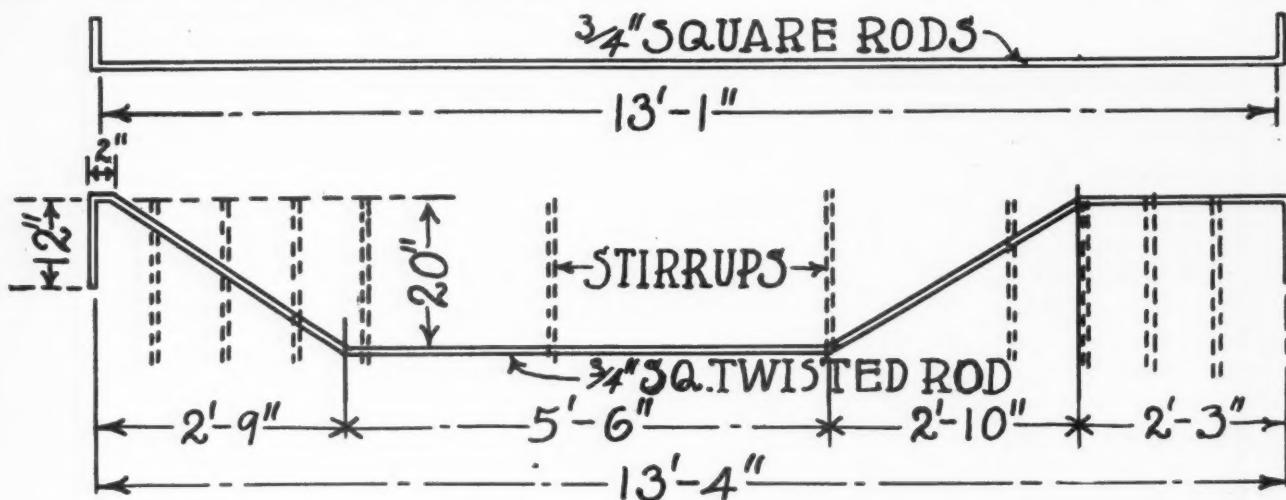
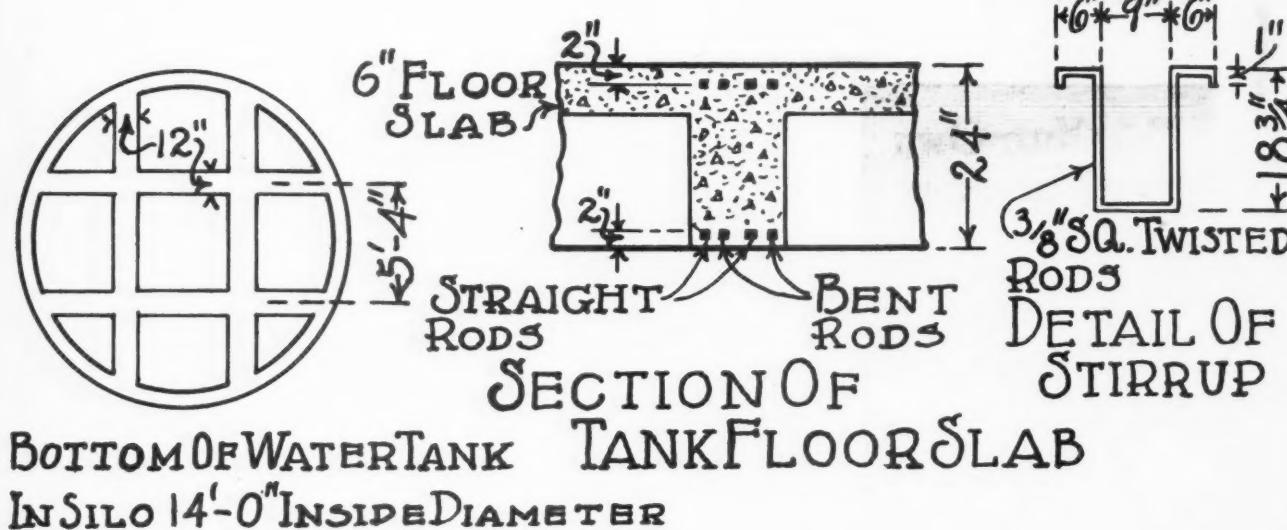
“Well, so long, got to be gettin’ home. But eight miles ain’t nothin’ now, not when you got a car.”

“He’s a pretty progressive sort of a man,” remarked a stranger, who had overheard the conversation.

“Progressive! I should say he is. And rich, too,” replied the hardware man.

“Well, the first explains the last,” said the stranger, “and these farmers are beginning to wake up to the fact.”

THE Correspondence Department is the place where members of the AMERICAN BUILDER family give and secure information. Make use of it.



for  
Stores, Offices  
and Homes

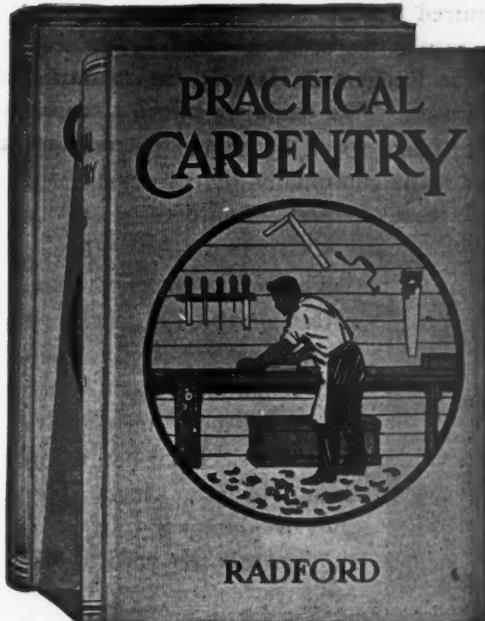
# Hopson Metal Ceilings and Sides

The right ceiling—a problem that often confronts you. Solve it with Hopson Metal Ceilings. Easy and economical to install—and unexcelled for handsome effect.

Our new line of steel ceilings is original in design and decorative to a degree never before attained. The requirements of the builder as well as the preferences of the owner have been skillfully embodied in our products.

Our catalogue—loaded with beautiful illustrations—shows what we have to offer. We hope you will Write for a Copy Today

W. C. HOPSON CO.  
531 Ellsworth Ave. Grand Rapids, Michigan



Two volumes of reliable textbooks to which to refer in work that is new and unusual. **PRACTICAL CARPENTRY** is the most complete, most accurate, most practical and most up-to-date work of its kind. It describes the best and quickest methods for laying roofs, rafters, stairs, flooring, mitering, coping, splayed work, circular work, and, in fact, for forming all kinds of joinery and carpentry work.

Bound in cloth, over 600 pages of useful and necessary information. Complete information from foundation to roof.

Price \$2.00 Postpaid  
**American Builder**  
1827 Prairie Ave., Chicago

## Great Bell PIPELESS FURNACE

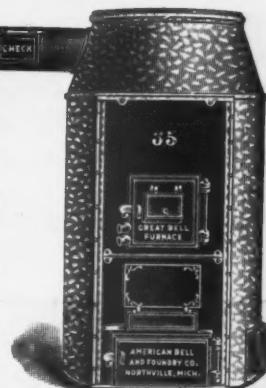
For big value and heating ability the **GREAT BELL** is supreme. Its popularity proves that.

Install pipeless furnaces because they save cost of piping and installation. And then install Bell Furnaces because they're best.

Where the building is too large for pipeless heating you cannot do better than install our Harmon Furnace.

*Reasons Why in Our Booklet*

**American Bell & Foundry Co.**  
Northville, Mich.



## FOR SALE

Mixer concern, well established in business since 1907 has plans which will necessitate dropping present line. Product is strictly high-grade and has good reputation among thousands of first-class contracting concerns and builders in this country and abroad. Export connections well established and productive. Will entertain offers for stock of finished machines, patterns, jigs and tools. Also land and buildings if desired. Good railroad facilities. For further particulars write

**E. M. C., Care American Builder**

# MOTOR TRUCKS IN THE BUILDING INDUSTRY



## Contractors Accomplish the Seemingly Impossible With Trucks

**BIG GOVERNMENT BUILDING PROJECT IS SPEEDILY FINISHED THRU EFFICIENCY OF FLEET OF MOTORS WORKING TWENTY HOURS A DAY**

**C**ONTRACTORS on building jobs of all kinds are making the most of the service the large capacity motor trucks give. What would have been considered impossibilities a few years ago now are being accomplished thru the use of motor trucks. Here is an instance:

A fleet of about 100 trucks toiling almost incessantly day and night on excavation work for three big government warehouses in Brooklyn set a new record for speed in removing the soil. In the short space of 60 days the trucks moved a huge mountain of earth, transporting nearly 400,000 cubic yards a distance of three miles. The achievement is distinguished by the fact that the government time limit was bettered by thirty days.

The trucks, many of them veterans of years of service, followed up the excavation work by delivering

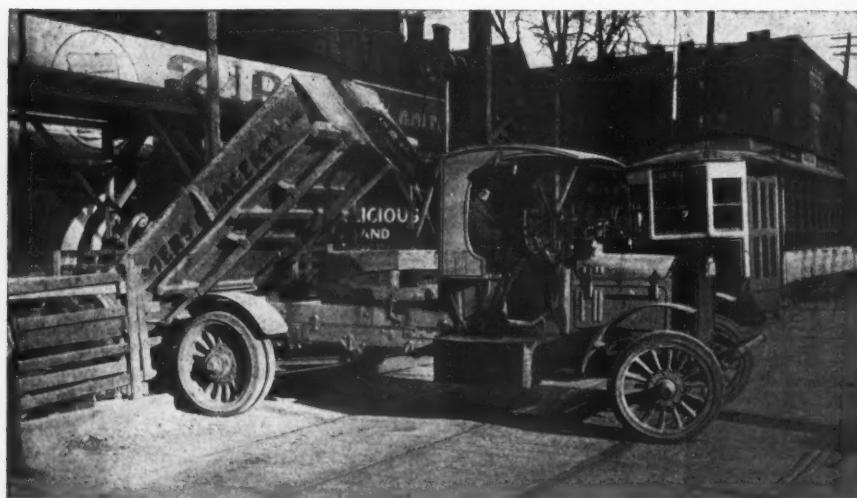
5,000 yards of concrete into the forms before the warehouses were completed.

### Each Truck Works 20 Hours a Day

To achieve this result, each truck had to work at top speed twenty hours a day. No truck could break down, for a faulty truck would cause a costly tie-up in the procession of trucks passing in single file thru the narrow runway.

"It required perfect truck performance to accomplish the results we secured," said Arthur Fogarty, manager for Rodgers & Hagerty, the contractors on the warehouses. "We could not afford a breakdown. We had to make speed by having the trucks operate under full loads continually. No truck was idle during the sixty-day period, despite the fact that some of them were nearly six years old."

The contracting firm owned only fifteen of the 100 trucks when the contract was secured. They rented the remainder from other truck owners. About ninety trucks were used daily. Each had a three-yard dump body. Eleven big steam shovels dumped four and sometimes nearly five yards of earth into each truck as it was run into position. The soil was hauled three miles to a swamp, which was filled. One man was used to operate each truck, working ten hours a day. Between the shifts the trucks were inspected, minor adjustments made and the gasoline and oil replenished.



One of the "Pierce-Arrow" Trucks Used by Rodgers & Hagerty, Contractors, Brooklyn, N. Y., in Removing the Soil and Delivering the Concrete Materials to the Sites of Three Big Government Warehouses in Brooklyn. The Truck Here Is Handling the Materials for the Mixers.

THE many new developments in after-the-war building make it doubly important that you "Look before you build."

This great exhibit floor, filled with the newest ideas of America's leading manufacturers, will post you fully on every angle of the building field.



# Building Material Exhibit

ENTIRE  
SECOND  
FLOOR

INSURANCE EXCHANGE BUILDING  
CHICAGO

Jackson  
Blvd. and  
Fifth Ave.

It is worth a special trip to see.

Admission is free—so are our services. Information or estimates furnished gladly without cost or obligation.

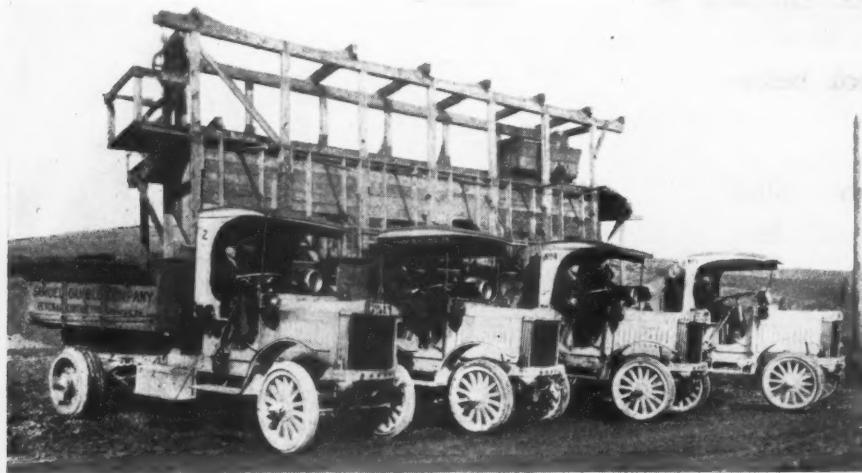
If you can't come in person, write for any facts or figures that you are interested in.

LOOK  
BEFORE YOU  
BUILD

Send for Our Free Magazine

**Gasoline Consumption Was Low**

The gasoline consumption was one gallon for about four and one-half miles, an average of 30 gallons being consumed daily by each truck. Each truck made ten round trips in ten hours, traveling 132 miles every



The Samuel Gamble Co., Carnegie, Pa., Sends Its Four-Ton "Ricker" Trucks to the Source of Supply and Saves Money in Delivering Stone, Gravel and Sand to the Building Job.

twenty hours between the excavation and the dump.

"We depended on the trucks to stand the strain of almost continuous day and night operation to maintain the clock-like regularity of schedule, to operate economically and to insure speedy haulage," said Mr. Fogarty. "They did not fail."

**Such Work Gives Confidence**

It is such performances as the one here cited that have made the motor truck one of the necessary pieces of equipment for building contractors. Thru their speed in covering ground and in loading and unloading they keep a continuous stream of materials going to and from the job. The men and the equipment, such as the concrete mixer, thus are kept working at capacity and there is no loss because of idleness.



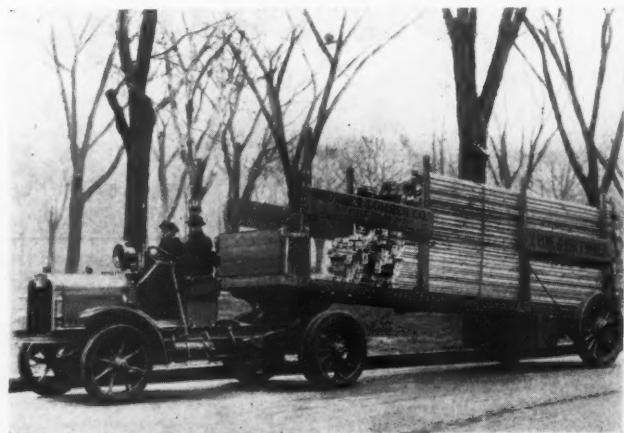
Here is a 3 1/2-Ton "Republic" Truck, Equipped With a Dump Body, Designed to Do the Work Required by Building Contractors.

**Trucks and Trailers for Lumber Dealers**

THRU city streets and country roads and over the rough mountain trails, motor trucks and trailers are bringing from the forests and mills and delivering to the job lumber of all kinds for buildings.

The use of motor trucks and trailers in hauling lumber is growing rapidly. The reason is that the truck has proved to be an economical method of lumber transportation, while the trailer increases largely the truck's capacity, both for weight and for volume.

This has been proven by actual truck performance. What trucks and trailers are doing "on the job" is shown by the accompanying illustration. Two of the pictures show extremes in trailers in operation for lumber dealers, while the third is of a motor truck carrying rough lumber thru the New Hampshire Mountains.



The Trexler Lumber Co., New York City, Has Several 5-Ton "White" Trucks and Special Trailers, Designed to Haul Large Loads of Lumber.

The Trexler Lumber Company, New York City, is one of the large material dealers of the metropolis. The illustration shows one of the company's 5-ton trucks, with a special lumber trailer attached. The long trailer body was designed to carry huge loads of lumber, such as here seen. The difference in cost between hauling lumber by the old method of loading it onto a wagon drawn by horses and this modern method of utilizing a high power truck and trailer can be imagined by the size of the load the Trexler company has put on this outfit.

# The Republic Truck Record in NEW ORLEANS

## Some New Orleans Users of Republic Trucks

New Orleans Furniture Mfg. Company  
H. T. Cottam & Co., Ltd.  
Leon Godchaux Co., Ltd.  
The Fairbanks Company  
Dibert, Bancroft & Ross, Ltd.  
Armour & Company  
Woodward-Wright & Co.  
Empire Rice Milling Co., Ltd.  
Stern Foundry & Machinery Co.  
John Murphy Iron Works  
Davis-Wood Lumber Co.  
Chalmette Laundry  
American Broom Mfg. Co.  
National Smelting Works  
Coca-Cola Company  
Naval Stores Equipment Co.  
United Warehouse Co., Ltd.  
Importers Bonded Warehouse  
New Orleans Gas Light Co.  
New Orleans Railway Co.  
Douglas Transfer  
Holzer Metal Works  
Menge-Marine Hardware Co.  
Brook Tarpaulin Company  
Manion & Co.  
J. N. Pharr & Sons  
Yochim Bros. Co.  
Swain Show Company  
Orleans Demolishing Co.  
A. Patorno & Son  
Dwyer Piano Company  
Joseph Paysee Ice Mfg. Co.  
Thomas H. Handy Co.  
R. D. Pitard Hdwe. Co., Inc.  
N. O. Silica Brick Company  
Horse Show Pickle Works  
Peter Graham & Co.  
Export Novelty Company  
Klotz Cracker Factory, Ltd.  
Geo. W. Davidson & Co.  
Milan-Morgan Co.  
Alex Dussell Iron Works  
Chas. Ranta Welding Co.  
Glover Furniture Company  
Pendick & Ford, Ltd.

Down in picturesque, busy New Orleans, more than half of all the motor trucks in use are Republics.

Most of the truck tonnage consists of cotton, lumber, mill supplies, ship chandlery and other heavy materials. There is also a big mileage of cobblestone and mud roads.

Such conditions make truck users wary and discriminating. They buy on performance and that is why the "Yellow Chassis Trucks" are found in such dominating majority on New Orleans' streets.

United Warehouse Co., Ltd., operating one of the largest bonded warehouses in the world, say: "Our pair of two-ton Republic Motor Trucks are as essential to the successful operation of our business as our elevators. They are doing the work of five horse drawn vehicles of equal capacity."

Alex Dussell Iron works say: "We purchased our first Republic Truck 2½ years ago. It proved so satisfactory that we soon followed it with an order for another and in the future will use Republic Trucks only."

## The "Yellow Chassis" Trucks— that serve so well

Model 10: 1 Ton, with Express body... \$1535  
Model 11: 1½ Ton, chassis..... 1885  
Model 12: 2 Ton, chassis..... 2275  
Model 19: 2-2½ Ton, chassis..... 2395  
Model 20: 3½ Ton, chassis..... 3450

All Prices F. O. B. Alma, Michigan

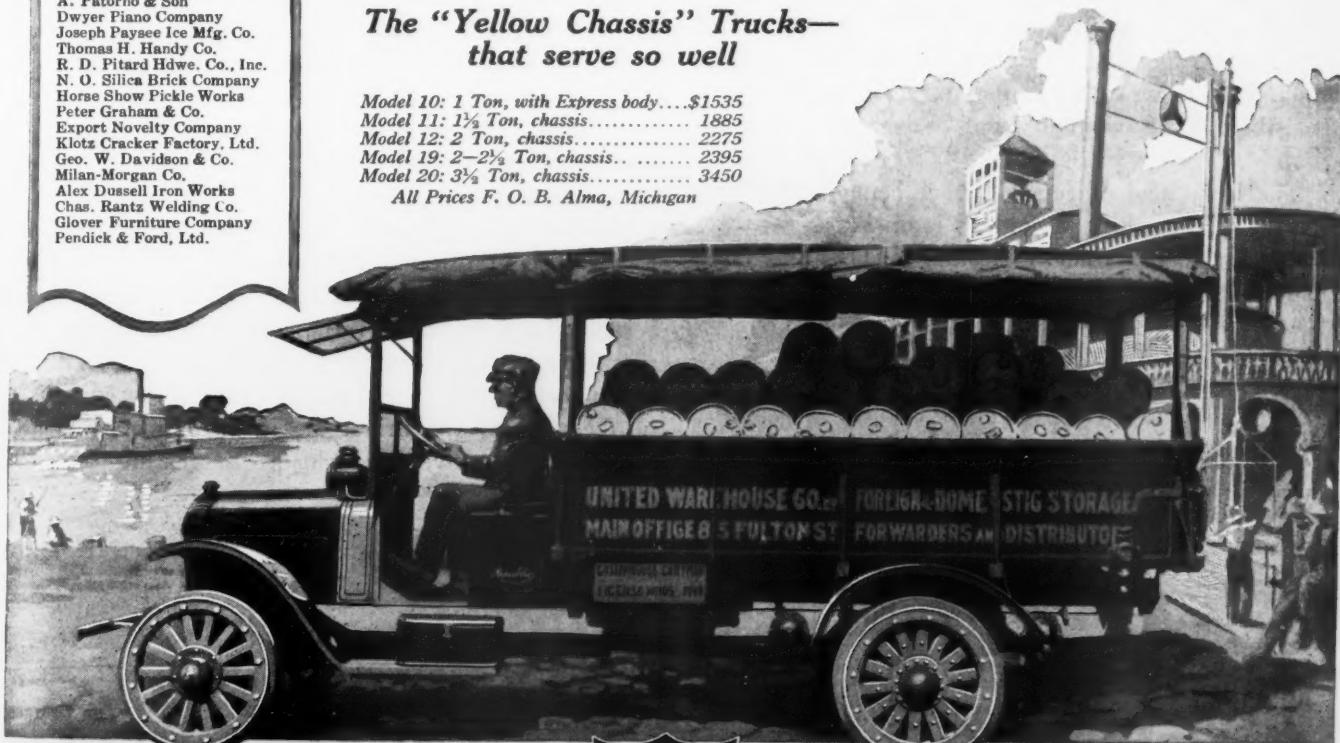
Stern Foundry and Machinery Company say "We keep our four Republic Trucks on the go constantly and have them entirely satisfactory in every respect."

Menge Marine Hardware and Supply Co. say: "Many months ago we bought our first Republic Truck. It proved so satisfactory that we soon ordered another Republic and both of them are giving us highly efficient service."

New Orleans' experience with Republic Trucks is typical. Republic users in that city are simply repeating the same opinions that have already been given in every part of the world. Yet this testimony is highly significant to business men in search of more efficient haulage."

More than 1400 Republic Service Stations are conveniently located to serve every Republic user.

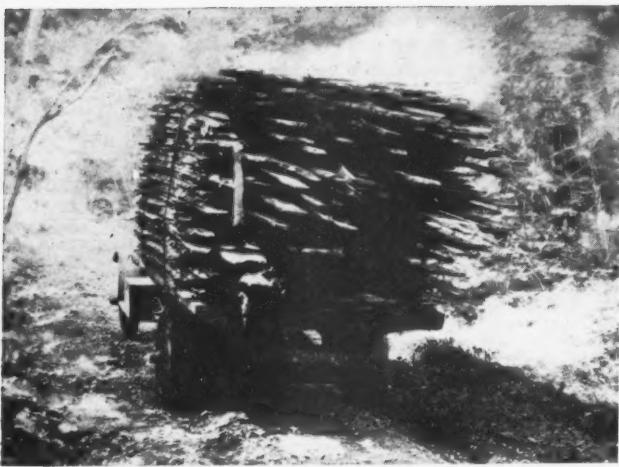
REPUBLIC MOTOR TRUCK CO., INC.  
Alma, Michigan



# REPUBLIC TRUCKS

The Torbensen Internal Gear Drive—used in all Republic Trucks delivers 92% of the motor power to the wheels. We know of no other type of drive that delivers as much. The POWER-LOK does the work of the differential, but eliminates its bad features. The POWER-LOK drives through the wheel which has traction, preventing stalling and skidding.

*Built by the Largest Manufacturers of Motor Trucks in the World*



F. S. Wiley, Leaconia, N. H., Uses This 3½-Ton "Federal" Truck to Haul Rough Lumber Thru the Mountains. The Rough Roads Are Negotiated Easily.

The extreme in trailers is shown in the second illustration. Here is a two-wheel trailer that is operated by the Heddles Lumber Company, of Edgerton, Wis. This trailer has a capacity of 1,800 pounds and is being drawn by a light touring car. The cost of such a trailer is small; in fact, about what an old-fashioned "democrat" wagon sold for. The Heddles company say that by using such a trailer for small loads of lumber, there is a saving of about 75 percent of haulage cost.

The large load of rough lumber being hauled thru the New Hampshire Mountains is on a 3½-ton truck owned by F. S. Wiley, Leaconia, N. H. This truck had no difficulty in negotiating the mountain roads

with a big load and delivers lumber thruout that section speedily and economically.

These are but three instances of what trucks and trailers are doing for lumber dealers. But thousands more could be shown, if space permitted. By the very nature of the materials lumber dealers sell and deliver to their customers they must have hauling equipment that will stand up under heavy loads. And to make this equipment profitable it must be speedy and easily loaded and unloaded.

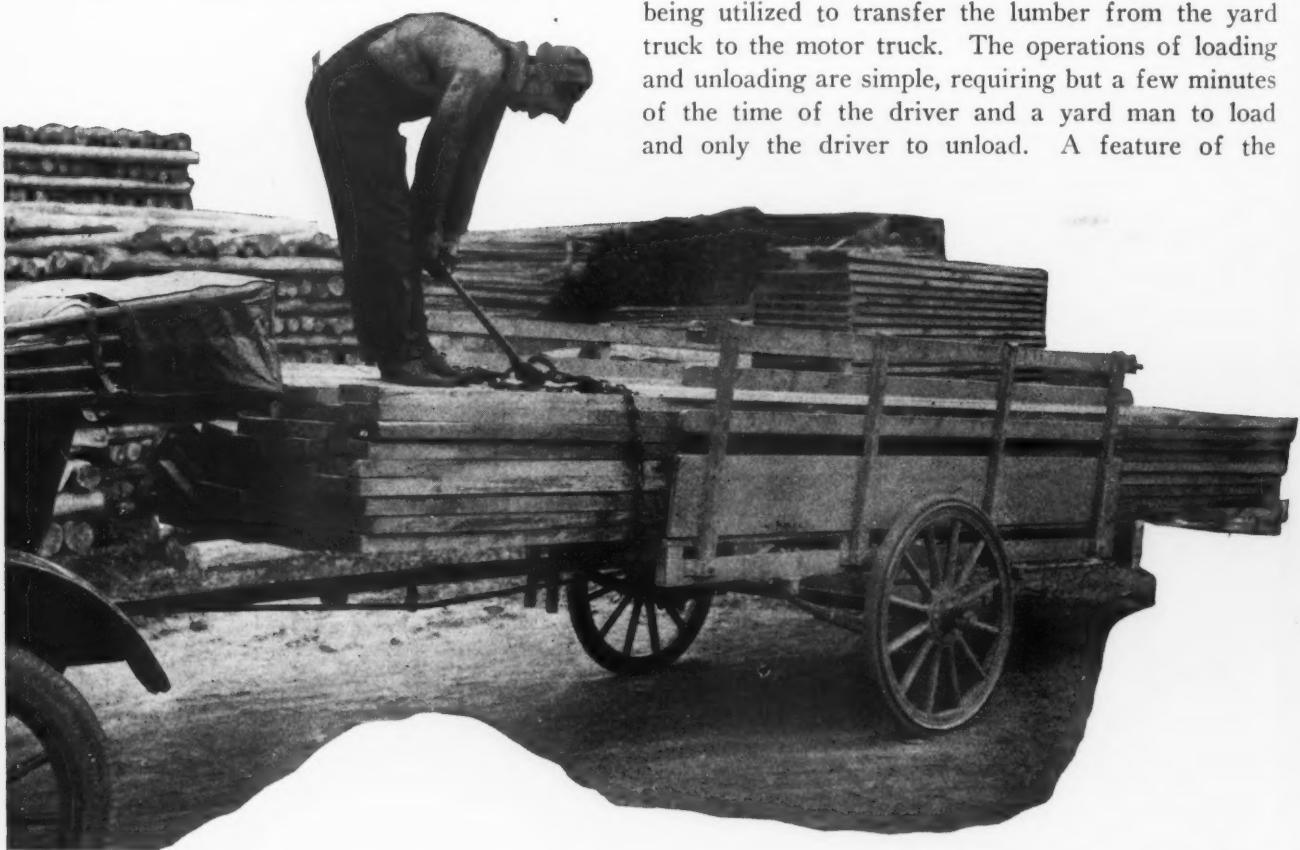


#### Keeping the Motor Truck Busy

To operate a motor truck economically it must be kept busy, for therein lies the saving in having this sort of hauling equipment. The time consumed in loading the truck is valuable time—time that costs the contractor or lumber dealer money. To eliminate this loss in time and the consequent loss in money, many lumber dealers have a yard truck, on which loads of lumber are placed while the truck is delivering its cargo and then quickly transfer it to the truck.

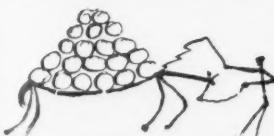
This is the time and money-saving plan adopted by the James Lumber Company, Baltimore, Md. The James company has a yard truck on which the lumber is loaded and when the truck returns light the load is transferred. The truck and yard truck and the method of loading and unloading the truck are shown in the accompanying illustrations.

Thru the special bodies, equipped with rollers which remove the lumber quickly and easily, much time is saved in lumber hauling. These same rollers now are being utilized to transfer the lumber from the yard truck to the motor truck. The operations of loading and unloading are simple, requiring but a few minutes of the time of the driver and a yard man to load and only the driver to unload. A feature of the



The Heddles Lumber Co., Edgerton, Wis., Saves a Large Percentage of Its Hauling Cost by Using This 2-Wheel "Highway" Trailer Attached to a Ford Touring Car. The Trailer Has a Capacity of 1,800 Pounds.

# Get the Idea of the Martin Method



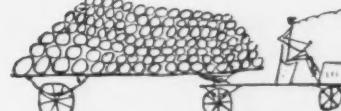
A horse cannot carry more than 1-1/4 ton



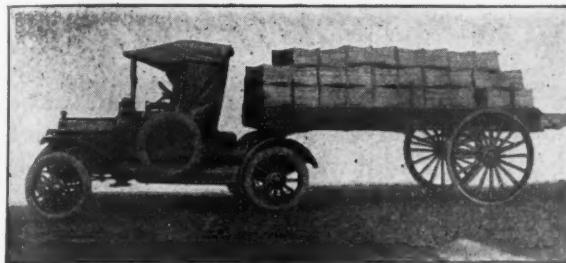
But can easily pull a ton



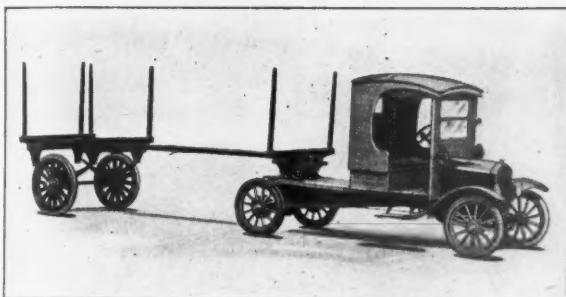
A runabout will soon break down under a ton strain



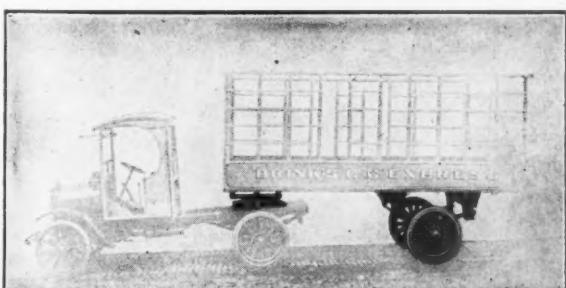
But the same runabout can easily pull 2 to 3 times its carrying capacity



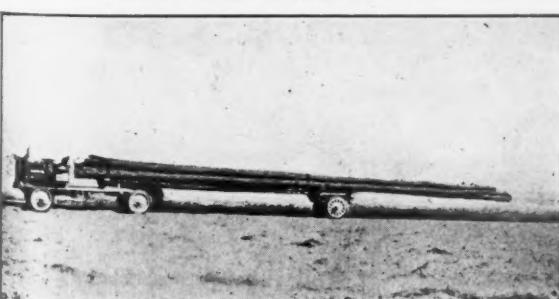
1-ton 12-foot Express Type Semi-Trailer



3-Ton Extension Type Trailer. This type is made in all sizes from one to ten tons



Showing how the Martin Fifth Wheel and Rear End Assembly are in effect a chassis ready to receive any kind of body



42-ft. Timbers on a Martin Extension Semi-Trailer.

**THE MARTIN METHOD OF SEMI-TRAILER TRUCKING** is ideal for the lumber business or building contractor.

IT IS the idle hours that make motor trucking costs climb. The MARTIN METHOD eliminates the time lost in loading and unloading, by releasing the truck. One truck can handle many of the Martin Semi-Trailer outfits.

THE BASIS of the MARTIN METHOD is the famous Martin Rocking Fifth Wheel, by means of which any wagon body may be converted into a Semi-Trailer.

BY USE of the trailer principle, a motor can draw three times the weight that can be handled if loaded directly upon the motor truck. The PULL beats the CARRY.

ONE MAN can handle the entire outfit, can "speed up" and make sharp and abrupt turns without danger of upsets.

THE INITIAL COST of installing the MARTIN METHOD is low, and it lends itself to every form of business. You could use it to advantage.

USE of the Martin Fifth Wheel guarantees perfect and easy traction over rough and uneven roads. There is no whipping from side to side.

WITH THE MARTIN OUTFIT, the load may be backed as easily as with a motor truck.

WHEREVER INSTALLED the MARTIN METHOD has reduced hauling expense and made it possible to cut labor costs.

YOU WILL BE INTERESTED in the Illustrated and Descriptive book on the MARTIN METHOD which will be mailed upon request.

Trailer equipment, 1-10 ton capacity.

**MARTIN ROCKING FIFTH WHEEL COMPANY**  
P. O. BOX 1244B

SPRINGFIELD, MASS.



The James Lumber Co., Baltimore, Md., Loads the Lumber for Its "Packard" Trucks Onto a Yard Truck and Transfers It Quickly by Means of the Rollers of This Special Lumber Body. This Keeps the Truck in Continuous Operation.

truck here shown is the slanting endgate, which allows the lumber to drop gradually and prevents damage.

Such hauling equipment and auxiliary yard truck make handling and hauling lumber economical, and cut one of the big lumber yard costs.

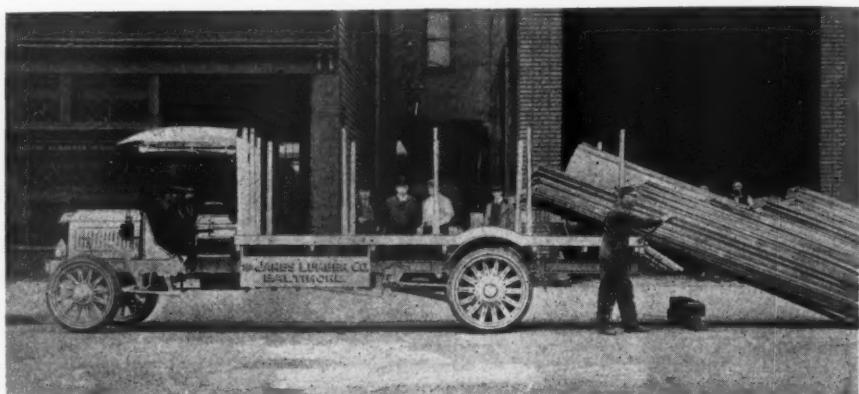
#### Trailers for Lumber and Material Dealers

MOTOR trucks are almost universally used by lumber and building material dealers. The trucks themselves, because of their ability to carry heavy loads, have been found most efficient in delivering lumber and such other materials as cement, sand, etc. However, in recent years the development of the trailer, both for heavy and light duty, has made this addition to the hauling equipment

necessary, if the work is done in an economical way.

The trailer is a money-saver because it increases the hauling capacity of the truck, without greatly increasing the cost of operation. The trailer also costs a great deal less than the truck, and more often than not more than doubles the truck's capacity. Thus do dealers supply themselves with the means of delivering twice the amount of materials without much additional cost.

How the heavy duty trailer is employed by lumber dealers is shown in an accompanying illustration. Here is a trailer loaded with heavy timbers, which the truck could not handle with any degree of efficiency.



How the "Packard" Truck with a Special Lumber Body Is Unloaded. The Slanting Endgate Prevents the Lumber from Dropping Suddenly and Saves It from Damage.



This Small Four-Wheel "Miami" Trailer Doubles the Capacity of the Light Truck in Hauling Cement and Other Like Building Materials.

# Miami Trailers will solve your *Bulky Load* problems!

Each of the twenty different Miami Trailer models gives the greatest possible efficiency in handling the class of load for which it is designed to carry.

Every contractor knows that loads cannot be altered to fit trailer construction—the trailer must be designed for the load to be hauled.

For instance, no "jack-of-all-trades" trailer can be used regularly to handle 23 to 35 beams or poles or other long lumber.

That Miami Pipe and Pole Trailers reduce the hauling cost of such loads may be taken for granted. Yet, because of their "design to fit the job," they reduce handling costs tremendously!

*Tell us what you haul—how and in what size loads. We want you to have our literature.*

**The Miami Trailer Co.**  
Troy, Ohio. U. S. A.

## Miami Trailers

are built in all capacities from 800 to 6000 lbs.

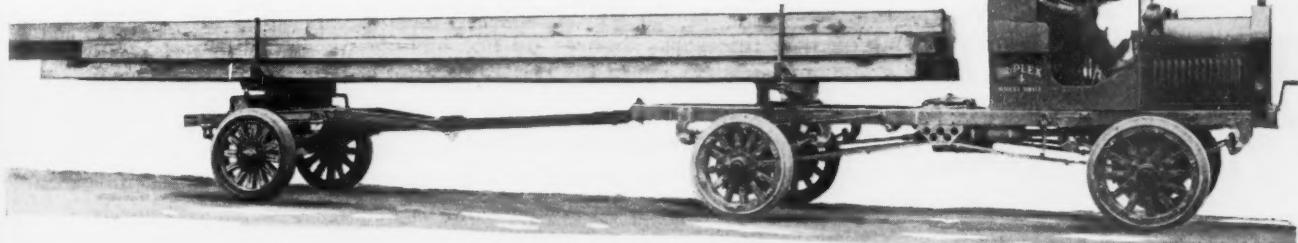
There is a body design for every business—over twenty-five in all.

Our line includes:

**Four Wheel Trailers** from 1250 lbs. to 3 tons.

**Two Wheel Trailers** from 800 to 2000 lbs.

**Pole and Semi-Trailers** from 1 to 5 tons capacity.



## THE JACKSON AUTO TRAILER

For contractors who own a car there can be no better investment than the Jackson Auto Trailer. They make your car a paying investment. Short, quick hauls are mighty important to the busy builders.

Jackson Auto Trailers are made in many sizes and styles to suit your individual needs. We have just the Trailer you have long wanted.

**Write Us Today**

**THE MILES MFG. CO.**  
Department 17 JACKSON, MICH.

## Contractor's Handy Auto Trailer

**SPEED—ECONOMY—STRENGTH**

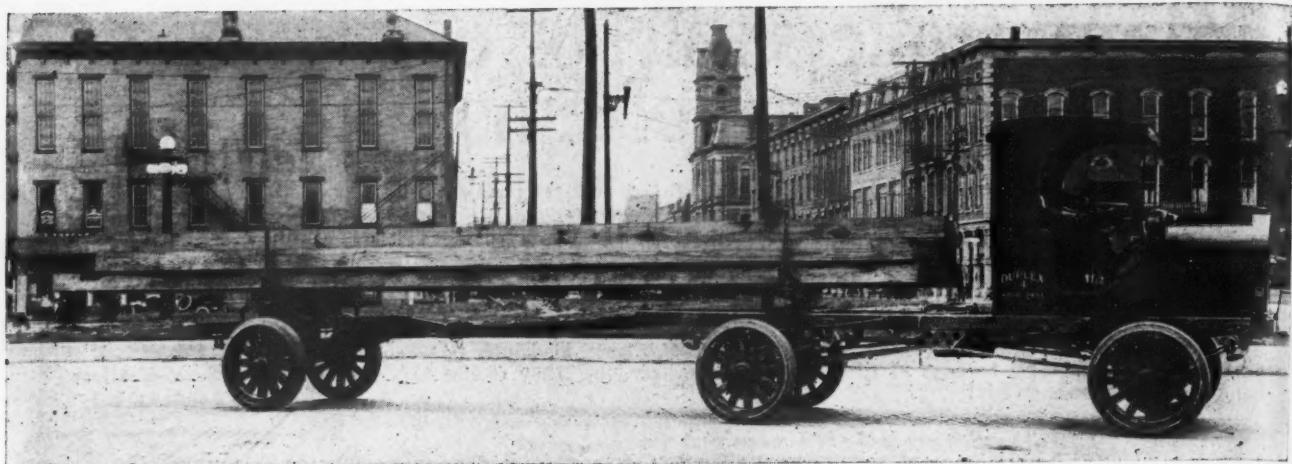


Capacity—2000 pounds. Body—8 feet long, 46 inches wide, 12 inches high. Body and under frame built of open hearth steel. Axels—1½ inch square bed, special high carbon steel. Springs—Semi-elliptic, oil tempered and double heat treated. Bearings—Bower roller. Wheels—1½ inch spoke, artillery type, second growth hickory. Tires—32x2, solid rubber. Weight—534 lbs. Other models with gates at front; also extension tongue which permits carrying lumber, poles, ladders, etc. 30 feet long.

*Write for Catalog C.*

**Rogers Brothers COMPANY**

Albion - - - - Pa.



Here Is a Heavy Duty "Miami" Semi-Trailer Hauling Foundation Timbers, Something That This Outfit Is Specially Fitted for.

The adjustable reach of the trailer makes it possible to increase the length of the body materially.

The other illustration shows a smaller trailer hauling cement. Cement is heavy, but does not take up so much space as lumber. Consequently this sort of a trailer is of the type the material dealer wants.

Using equipment such as this in addition to the trucks is economy and cuts down the delivery costs. Which is a good reason for their use.



#### Haulage Costs Reduced by Trailer

The increase in profits made possible by trailer is shown in the following data on hauling lumber, prepared by W. J. Scratchley, of the Heavy Hauling Company, Seattle, Wash.:

	Without Trailer	With Trailer
Distance round trip, miles.....	90	90
Distance with load, miles.....	50	50
Number trips per week.....	5	5
Gasoline per trip, gallons.....	12	15
Miles per gallon gasoline.....	7½	6
Quarts oil per trip.....	4	5
Miles per quart oil.....	22½	18
Tons pay load, trip.....	3½	6
Feet dry lumber per trip.....	4,000	6,500
Income per trip at \$4.50 per M. feet.....	\$18.00	\$29.25

Figuring cost of gasoline at 22c a gallon and oil at

25c a quart, the cost of fuel per trip without trailer is \$3.64 and with trailer is \$4.55. Deducting fuel costs, the profit per trip is \$14.36 without trailer and \$24.70 with trailer, or \$10.34 more with the trailer. These figures do not include the investment or depreciation of the trailer. Mr. Scratchley uses an old 1½-ton truck chassis with steering gear, converted for use as a trailer. The trip is between Monroe, Wash., and Seattle, and the reason for the longer return trip to Seattle is that a detour is necessary when coming back with the load. His monthly income runs about \$250 more per month (above fuel costs) with the trailer than without it.

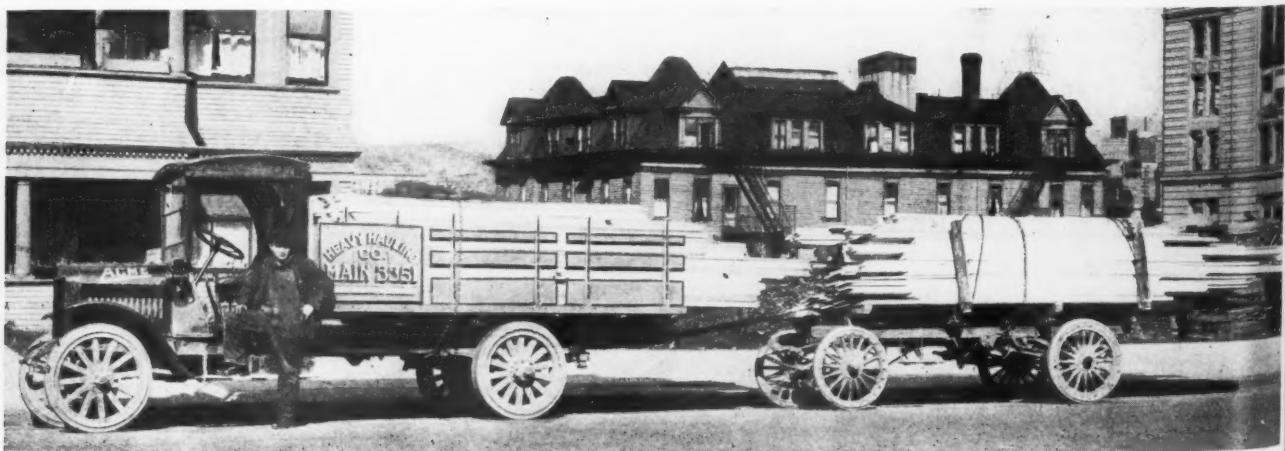
The distance is great enough to make it impossible for more than one trip per day either with or without the trailer, the trip taking about eight hours' running time for the ninety miles. The average number of trips per month is twenty-two.

#### ◆ Harmony

"It is a mistake to think women in politics will divide the home. Now, I always vote the same ticket as my husband does."

"You do?"

"Certainly. But I tell him first what that ticket is."—*Baltimore American*.



W. J. Scratchley and His "Acme" Truck and Trailer Ready to Start with a Load of Lumber. He Hauls Regularly Between Seattle and Monroe, Wash. His Data Shows That the Trailer Is a Big Profit Producer.

# Erecting Good Dairy Barns Brings Big Profits To Builders

Dairy barns so built and equipped that they make for more milk, better milk, cleaner milk—and less work for the dairyman, are in big demand. Dairymen all through the land are either erecting new and better barns or are remodeling their old ones.

James Barns and James Equipment are known to these dairymen. We advertise heavily in farm and dairy papers.

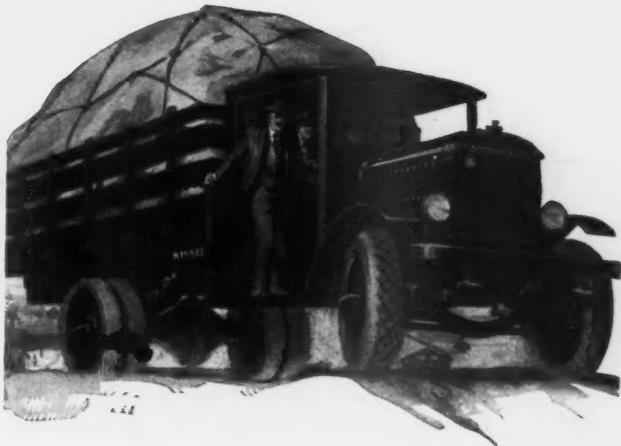
We will be glad to cooperate with you and help you create desire for building barns in your vicinity the "James Way." We will send you the 336 page book

"The James Way," illustrated below—**FREE**. It is packed with valuable dairy barn building facts and directions.

## The James Way

It will enable you to "talk dairy barns" convincingly. It costs you nothing. Simply send us the names of farmers you know who intend to build or remodel barns and the size of their herds, and this valuable book goes to you free. Write today.

**JAMES MFG. CO.**  
EM75 Cane St., Ft. Atkinson, Wis.  
(East of Ohio Address)  
EM75 Williams Street, Elmira, N.Y.



## A 365-Day-A-Year Service Range

THE far reaching effect in the building business of Kissel's eleven years of motor truck designing and construction experience is that Kissel Trucks are built to overcome obstacles unsurmountable with trucks of less development.

This 100% service range is possible only with perfectly balanced trucks—in which weight, size, dimension and power are related to one another in exact proportion—giving an incomparable, perfectly balanced chassis headlined by the powerful Kissel-built engine.

You should have the 1919 Kissel Truck Catalog showing how Kissel Trucks will fit your individual requirements by giving the Kissel "three-way-truck-performance-range," **over-supply of power, unusual ability for continuous service and low operating cost.**

Kissel Trucks are sold in all principal cities where specifications and catalogs can be secured or direct from the factory.

**KISSEL MOTOR CAR CO., Hartford, Wis., U. S. A.**

**KISSEL TRUCKS**



## Lesson in Plan Reading FREE!

Send now for this FREE lesson which we will send to prove how quickly you can learn Plan Reading by our new, easy method. Not a penny to pay for this lesson. Just ask for it. Without a good knowledge of plans your opportunities are limited. At work you don't get the chance to study blue prints or to have their meaning explained. We make the chance for you. We place in your hands plans used on actual construction by contractors in Chicago and other cities, and you get lessons by men in charge of building work who will help you at every step and make you an expert plan reader.

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Our Builders' Course gets right down to the things you need to know. And you can get it on easy payments. A small first payment when you enroll—then payments monthly—so small you will never feel the cost. At least write and find out what this course really offers and how you can make more money by learning what we will teach you in a short time.

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Use your spare time at home to learn how to be a better workman, a better foreman or a better contractor. Even after you complete the course you have the privilege of consulting us when you want suggestions. We will always be ready to help you.

### Some Things We Teach

**Plan Reading** Use and meaning of all the lines. Plans and elevations. Reading dimensions. Detail drawings. Laying out work from plans. Practice in reading plans from basement to roof, etc., etc.

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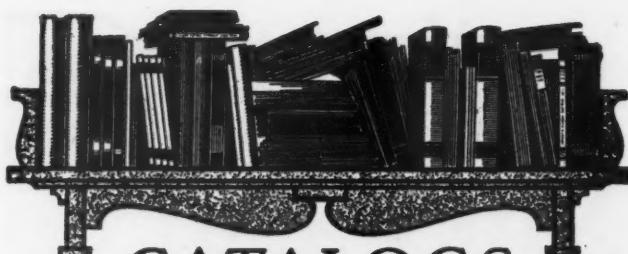
## Send the Coupon

Get this information now. Learn how to make more out of your work or out of your business by knowing more about it. All this information is free. Send for Free Lesson and this information—now. Just send request on the coupon below.

### Chicago Technical College

636 Chicago "Tech" Building Chicago, Illinois  
Without obligation on my part, send me the Free Lesson in Plan Reading, also information on your Builders' Course in Plan Reading, Estimating, etc.

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Street .....  
City ..... State .....  
Present Occupation .....



## CATALOGS BULLETINS & BOOKS RECEIVED

The following literature, dealing with subjects of interest to builders, is now being distributed:

"Fifty Years of a Successful Industry" is the title of the semi-centennial souvenir of the Yale & Towne Manufacturing Co., Stamford, Conn., and New York City. The booklet, which contains 80 pages and cover, tells the history of Yale locks and other products of the company. It is illustrated with many portraits of men who helped in the successful career of the company.

"Simonds Saw Steel Products in the War" is the title of a 32-page and cover booklet, issued by the Simonds Manufacturing Co., Fitchburg, Mass. The booklet tells the part Simonds steel played in the war in protecting armored motor cars and tanks and the large naval guns that were mounted on specially constructed railway cars, and is well illustrated.

"Reducing Ash Disposal Costs" is the title of a 12-page booklet describing the American steam ash conveyor, manufactured by the American Steam Conveyor Corporation, Chicago. The booklet is illustrated with views in large boiler rooms where the American steam ash conveyor is installed.

Electrical appliances for the home are described and illustrated in a novel piece of advertising literature issued by the Edison Electric Appliance Co., Chicago, for hardware dealers. The folder is printed in colors and illustrates the electric appliances the company sells.

Parallel doors for warehouses and overhead carrier systems are described and illustrated in the May issue of "DooR-Ways," the monthly magazine of the Richards-Wilcox Manufacturing Co., Aurora, Ill. Descriptions of installations of this company's products are given. The cover contains an excellent portrait of Col. Theodore Roosevelt.

Waterproof stucco houses, apartment buildings and structures of concrete are illustrated and described in the April issue of the "Medusa Review," issued by the Sandusky Cement Co., Cleveland. The booklet contains 20 pages and is well illustrated.

"Bathroom and Kitchen Combinations" is the title of Catalog J, issued by B. Karol, Chicago. Furnaces, water supply plants and the plumbing that goes with the latter are illustrated and described.

Portable saw rigs and machinery for the woodworking plant are described in an illustrated catalog of 24 pages and cover, issued by the American Saw Mill Co., New York City. This company also is putting out a booklet entitled "How Americans Helped Win the War," which describes the remarkable construction work done by the American army both in this country and France.

Saving fuel by the use of the Eureka smokeless furnace is described in a 24-page and cover booklet, issued by the Eureka Smokeless Furnace Co., Chicago, manufacturer of boilers for steam plants. The booklet also contains tables



## PORCH HEIGHT PEARL PANELS BEST

WHEN YOU SCREEN A PORCH install Portable PEARL Screen Panels which lock together and close in the open sides of the porch. This creates a room which allows out-of-door living, a cool, shady retreat by day, an open air sleeping room by night—protected against disease-carrying flies and mosquitoes.

AS SHOWN IN OUR BLUE PRINT porch plan, sent free for the asking, these panels can be set up by any one in a short time and are as easily taken down for winter storage.

### To Insure You in the Excellence

of your workmanship, specify PEARL Wire Cloth. Due to its metallic coating, patented and controlled exclusively by us, Pearl is the longest lasting and therefore costs less in the long run, besides being the most handsome and sanitary. Its use insures satisfaction to you and your customer.

### Insist Upon the Genuine

It has two copper wires in the selvage and our red tag on every roll.

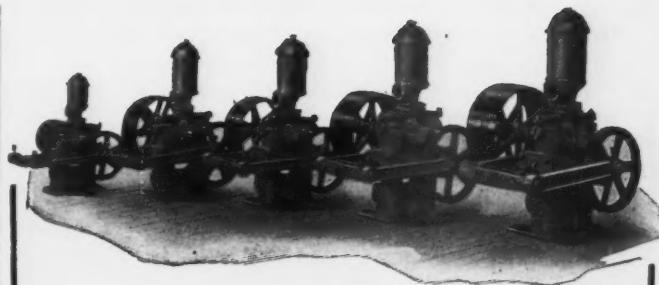


Call on our local dealer or write direct for samples and literature if you're interested in screen material.

Address Dept. "A"

**The Gilbert & Bennett Mfg. Co.**  
New York Georgetown, Conn. Chicago Kansas City

*G & B PEARL is made in two weights—regular and extra heavy. The best hardware dealer in your city sells "PEARL".*



**For Pumping Hot Water  
Handling Condensation of Steam  
Heating Systems  
Mine Pumping and General  
Water Supply**

*Use*  
**GOULDS**

**Fig. "Pyramid" Pump**  
1678

This pump is similar to our famous line of Fig. 1531 Pyramid Pumps, except that the cylinder is fitted with a removable cast bronze lining, and both ends of the connecting rods are fitted with removable bronze bushings, adapting this pump particularly to the above services.

The Fig. 1678 pump is built in 6 sizes, ranging in capacity from 5 to 100 gallons per minute, and is good for pressures up to 87 pounds or the equivalent elevation of 200 feet.

This line of Pumps is of the highest grade construction, yet of the simplest possible design and embodies features not to be found in any other pump.

If you use pumps for any of the above services let us send you complete information and prices.

**The Goulds Manufacturing Co.**  
Main Office and Works—Seneca Falls, N. Y.

New York	Boston	Chicago	Atlanta
16 Murray St.	58 Pearl St.	12-14 Clinton St.	3rd Nat'l Bank Bldg.
Pittsburgh	Houston	Philadelphia	
634 H. W. Oliver Bldg.	1001 Carter Bldg.	111 N. 3rd Street	

showing quantities of brick required to set the boilers.

"How to Use Self-Centering Trussit and Steel Tile" for roofs, floors, ceilings and partitions is explained in an illustrated 12-page booklet, issued by the General Fire-proofing Co., Youngstown, O. The booklet contains many illustrations and has a blue print supplement showing construction details.

"Truscon Standard Buildings" is the title of a book on standardized buildings built with stock units, issued by the Truscon Steel Co., Youngstown, O. The booklet contains 40 pages and cover and is well illustrated with views of many buildings constructed of this material.

"Alpha Aids No. 16," issued by the Alpha Portland Cement Co., Easton, Pa., contains a blue print supplement showing details of sidewalk construction. This issue is devoted to road building and concrete coal pockets. Both articles are with views and drawings. The booklet contains 16 pages and cover.

"Labor Turnover and Industrial Training" is the title of a pamphlet issued by the Training and Dilution Service of the U. S. Department of Labor, Washington, D. C. The booklet is designed to help employers of labor retain their men and place them in the positions for which they are fitted or may be fitted.

**Hot water heating system for garages** of all kinds is described and illustrated in an elaborate 36-page and cover booklet, issued by the W. A. Schleit Manufacturing Co., Syracuse, N. Y., maker of the Wasco garage heating system. The booklet also contains several pages of testimonials from users of this system.

**How to plan and equip barns** is shown in a new and elaborate catalog, issued by Hunt-Helm-Ferris & Co., Harvard, Ill. The catalog contains many barn plans and describes by text and illustration the "Star" brand equip-

ment which this well-known firm manufactures.

**Own your home campaign literature**, consisting of a handbook on how to promote home building, specimens of newspaper advertisements and a 20-page and cover booklet for the prospective builder, is being distributed by the National Lumber Manufacturers' Association, Chicago, Ill.

**Building materials**, such as asphalt shingles, roll roofing, building papers, wall boards and other specialties, are described and illustrated in a series of folders, issued by Bird & Son, East Walpole, Mass. Each material is described in a separate folder.

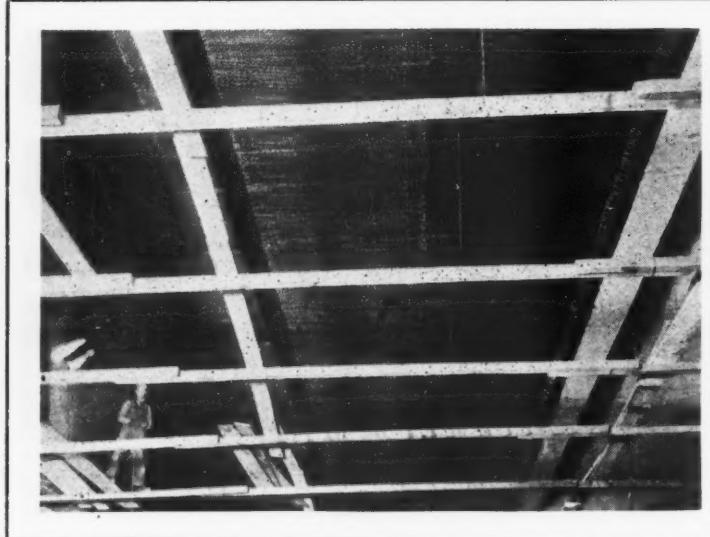
"Business Building Material for Building Material Business" is the slogan of the May issue of "The Medusa Co-operator," published by the Sandusky Cement Co., Cleveland, O. The magazine contains many articles that will help and interest material dealers.

**Hydro-pneumatic water supply systems** are described and illustrated in a new 48-page and cover catalog, issued by the Deming Co., Salem, O. The illustrations show several fine homes, both large and small, where Deming systems are in use and the pumping plants the company makes.

"Handbook on Fireproof Construction," using "Kno-Burn" expanded metal lath, is the title of a remarkably complete book issued by the North Western Expanded Metal Co., Chicago. The book contains 72 pages and cover, is well illustrated and is filled with valuable information for the contractor and material dealer.



**WHEN** you work out a new and simple method of doing something let the other members of the **AMERICAN BUILDER** family share your knowledge. Tell them about it thru the Correspondence Department.



built with this firm steel mesh is literally a solid wall of stone.

In the accompanying illustration you see "TRUSS-LOOP" lath used throughout in the construction of a large Newark, New Jersey, theatre. Here the lath was used on 3'-6" centers.

Note its rigidity, and its smooth even surface; and you can easily imagine with what speed and comparative ease the job was completed.

**Write Today for Our Illustrated Catalog and Building Data**

**THE BOSTWICK STEEL LATH COMPANY, Niles, Ohio**



SAULT STE. MARIE HIGH SCHOOL

## LIVING—STONE

Is the only reliable method of bonding cement. In the picture shown above there were 20,400 sq. ft. of Living-Stone used in bonding the concrete floors.

A perfect bond between top finish and concrete base can be had regardless of the time that has elapsed since the base was poured.

Living-Stone (non-acid) makes a perfect bond between new top and old base, and

by its use only can the builder do a reliable job of patchwork. The cost of Living-Stone is very little; one gallon is ample for 250 to 300 sq. ft.

Living-Stone is used today by all big architectural and engineering concerns throughout the entire country.

Write today for catalog and information.

**THE LIVING-STONE CO.**  
703 LAW BUILDING, BALTIMORE, MARYLAND

## Free—A New Book for Those Who Plan and Build

### Partial List of Contents

138 Photographic Illustrations

11 Pages of Details

10 Complete Specifications

Numerous Tables

Size of Book 8½" x 11"—64 pages

Arched floors

Ceilings

Conduits

Fences

Finishes for stucco

Floors

Furring

Garages

Overcoating

Partitions

Roofs

Safe loads on slabs

Stucco residences

Tanks

Walls and sidings

**METAL LATH**  
*Because Metal Lasts*



"Magnificent" — "invaluable" — "most useful" — "finest of trade literature" — are a few of the comments on the new Hy-Rib and Metal Lath Book just off the press.

Ordinarily our printed literature is not featured in our advertisements, which we prefer to devote to the merits of our products and service. But this new book is so exceptional in every way that we would be neglecting a duty to our friends if we did not bring it prominently to their attention.

The new Hy-Rib Book will be sent free to responsible persons, on return of attached coupon or request on letterhead. If you care to give us information about contemplated building, we would appreciate it, but at any rate write for book. Address Hy-Rib and Lath Dept.

**TRUSCON STEEL COMPANY**  
• YOUNGSTOWN, OHIO • WAREHOUSES AND SALES OFFICES IN PRINCIPAL CITIES

Reinforcing Steel, Metal Lath, Steel Windows, Steel Buildings, Pressed Steel, Cement Tile, Etc.

# HY-RIB

Truscon Steel Co., Youngstown, O.

Send free copy of new Hy-Rib Book. I am interested in building a.....

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Name.....

Position.....

Address.....

City.....



## NEWS OF THE FIELD

### Wayvell Chappell & Co., Chicago, Move Offices

Wayvell, Chappell & Co., manufacturers of floor surfacing machines, have moved from 12 North Market street to 408 West Grand avenue, Chicago. The company announces that the move was made necessary because its business now requires more factory floor space.



### Lime Association Annual Meeting at Pittsburgh

The Lime Association has made the following announcement:

"June 18 and 19 and the days upon which the annual meeting of the Lime Association will be held at the Willian Penn Hotel, in the city of Pittsburgh. Reservations are coming in from members who expect to attend that meeting, but allow us to call your attention to the fact that in order to insure your comfort you should notify us at the earliest possible moment whether or not it is possible for you to be present, so as to make the necessary arrangements to secure proper

accommodations. If possible, kindly state whether you wish single or double rooms, with or without bath."



### Dealers Remaining Loyal to Manufacturers Who Helped Win the War

The manufacturers of building supplies and specialties who devoted their plants to government work during the war are not finding that their action hurt their regular business. Instead, some manufacturers report, their action gave them a high standing with their customers, and now that they are resuming the manufacturing of their regular lines their agents and dealers are more loyal to them than ever.

One instance of this fact is the experience of the Upson Co., Lockport, N. Y. W. H. Upson, Jr., secretary of the company, says that he expects that some of the dealers handling the company's wallboard would be lost thru the inability to supply them with this product during the months the plant at Lockport was devoted to war work. He has been pleasantly surprised that this is not the case.

"On the contrary," says Mr. Upson, "we are finding that our dealers and distributors are remaining loyal to us."

Other manufacturers have had the same experience as the Upson Co., and now say that the demand for their products is greater than it was before the war.



### Milwaukee Corrugating Co. Enlarges Plant

The Milwaukee Corrugating Co., Milwaukee, Wis., has let the contract for the \$150,000 addition it announced would be built in connection with its plant this summer. The new building will be 125 by 240 feet, two stories high and of brick and metal construction. The addition to the plant is



### 4 Reasons for D-B Dampers

Keep heat from wasting.  
Conserve fuel.  
Protect room from chimney soot when fire is out.  
Aid correct construction of chimney throat.

### THE DONLEY BROS. CO.

East 74th Street Near Aetna Road  
CLEVELAND - - - - - OHIO

## *The Hook in the Poker Controls this Damper*

**S**IMPLY hook the poker through the ring. A push or a pull opens or closes the D-B Fireplace Damper. The fire is always under control. The flame warms the room, not the outdoors overhead.

There are two common kinds of fireplace dampers, those that cannot be adjusted while fire is burning and those that require the mantle front to be pierced for the operating handle to come through.

### The D-B Fireplace Damper

saves the mantle from being marred, keeps mechanism out of sight, yet is quickly adjusted with the aid of a common poker.

Write today for booklet on fireplace construction, also for handy catalog of many other Donley Ideas.





## Big Little Profit Builders

*Kees  
Money  
Saving  
Devices  
for  
Carpenters  
and  
Builders*

*Send  
for  
List  
and  
Samples  
to Dept.  
552*

### Kees

(Gossett)

Screen  
and  
Storm  
Sash  
Hinges  
make  
hanging  
so easy



That's Why You Should Use Them



They're the most up-to-date device on the market.

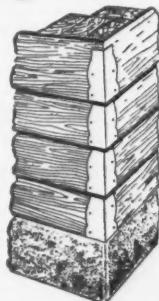
They're one of the big little things that insure satisfaction of the owner—and so reflect credit on your alertness and judgment.

Send for Free Samples.

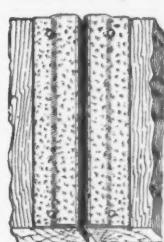
### Kees

#### Metal Building Corners

look classier than corner strips and are better because the corners can't warp open or split besides making a quicker job for you. The owner will be pleased because they're plain and produce the uncommon, artistic mitered effect economically.



#### Kees Metal Barn Batts for Vertical Siding



Examine this illustration of how they work



Before and after siding shrinks.



Any one who is going to put up a building of the type for which these battens are intended will see their value at a glance. Well, then, why not adopt this method? Your jobs will surely make a hit, if you do, for they won't split open and will be rat, wind and rain proof. Made of tight coated galvanized iron—5 to 12 ft. lengths—ready to apply.

**The Above Items Will Advertise You—**  
Why not adopt them? It'll pay you. Sold by most hardware and lumber dealers—if yours can't supply you, write us.

**F.D. Kees Mfg. Co. Beatrice, Nebr.**



**"Don't tell me  
you never had a chance!"**

"Four years ago you and I worked at the same bench. I realized that to get ahead I needed special training, and decided to let the International Correspondence Schools help me. I wanted you to do the same, but you said, 'Aw, forget it!' You had the same chance I had, but you turned it down. No, Jim, you can't expect more money until you've trained yourself to handle bigger work."

There are lots of "Jims" in the world—in stores, factories, offices, everywhere. Are you one of them? Wake up! Every time you see an I. C. S. coupon your chance is staring you in the face. Don't turn it down.

Right now over one hundred thousand men are preparing themselves for bigger jobs and better pay through I. C. S. courses.

You can join them and get in line for promotion. Mark and mail this coupon, and find out how.

#### TEAR OUT HERE INTERNATIONAL CORRESPONDENCE SCHOOLS Box 8167, SCRANTON, PA.

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

<input type="checkbox"/> ARCHITECT	<input type="checkbox"/> SALESMANSHIP
<input type="checkbox"/> Architectural Draftsman	<input type="checkbox"/> ADVERTISING
<input type="checkbox"/> Contractor and Builder	<input type="checkbox"/> Window Trimmer
<input type="checkbox"/> Building Foreman	<input type="checkbox"/> Show Card Writer
<input type="checkbox"/> Concrete Builder	<input type="checkbox"/> Sign Painter
<input type="checkbox"/> Structural Engineer	<input type="checkbox"/> BOOKKEEPER
<input type="checkbox"/> Structural Draftsman	<input type="checkbox"/> Stenographer and Typist
<input type="checkbox"/> Ship Draftsman	<input type="checkbox"/> Higher Accounting
<input type="checkbox"/> Plumber and Steam Fitter	<input type="checkbox"/> COMMERCIAL LAW
<input type="checkbox"/> Heating and Ventilation	<input type="checkbox"/> Common School Subjects
<input type="checkbox"/> Plumbing Inspector	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Foreman Plumber	<input type="checkbox"/> GOOD ENGLISH
<input type="checkbox"/> Sheet Metal Worker	<input type="checkbox"/> ILLUST. RATING
<input type="checkbox"/> CIVIL ENGINEER	<input type="checkbox"/> Railway Mail Clerk
<input type="checkbox"/> Surveying and Mapping	<input type="checkbox"/> CIVIL SERVICE
<input type="checkbox"/> ELECTRICAL ENGINEER	<input type="checkbox"/> MINE FOREMAN OR ENGR
<input type="checkbox"/> Electric Lighting and Rys.	<input type="checkbox"/> Metallurgist or Prospector
<input type="checkbox"/> Electric Wiring	<input type="checkbox"/> Gas Engine Operating
<input type="checkbox"/> Telephone Engineer	<input type="checkbox"/> Textile Overseer or Supt.
<input type="checkbox"/> Telephone Work	<input type="checkbox"/> TRAFFIC MANAGER
<input type="checkbox"/> MECHANICAL ENGINEER	<input type="checkbox"/> AUTOMOBILE OPERATING
<input type="checkbox"/> Mechanical Draftsman	<input type="checkbox"/> Auto Repairing
<input type="checkbox"/> Machine Shop Practice	<input type="checkbox"/> Navigation
<input type="checkbox"/> STATIONARY ENGINEER	<input type="checkbox"/> AGRICULTURE
<input type="checkbox"/> CHEMIST	<input type="checkbox"/> Poultry Raising
	<input type="checkbox"/> Spanish
	<input type="checkbox"/> French
	<input type="checkbox"/> Italian

Name \_\_\_\_\_  
Present \_\_\_\_\_  
Occupation \_\_\_\_\_  
Street \_\_\_\_\_  
and No. \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

required to take care of the company's increase in business in "metal building lumber." The addition will be equipped with the latest and best machinery. When it is completed the company expects to add some new specialties to its already extensive line of sheet metal products.

## **Entertain Texas Lumbermen's Association**

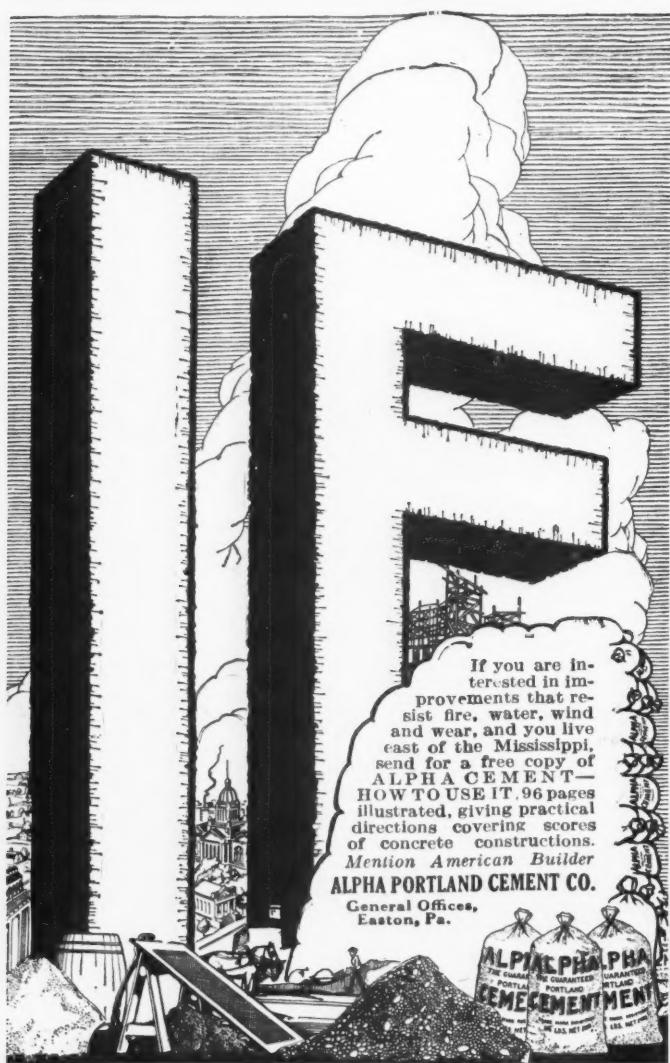
At the thirty-third annual convention of the Lumbermen's Association of Texas, held at Galveston, April 8 to 10, one of

# Give Your Customer a Better Home

and make an added profit. Plan a modern kitchen, laundry and bath for your client's new home. Deming Water Systems are low in cost, operate with little expense, and supply all the water required. Serve your client by being able to supply all needed information and take the order and extra profit yourself.

*Write today for complete information*  
**THE DEMING CO., 99 Depot St., Salem, Ohio**

**Deming**



the most enjoyable events of the convention was contributed by the Cornell Wood Products Co. of Chicago. On Thursday afternoon, the last day of the convention, all the delegates and their ladies were guests of the company on a boat ride in the Gulf of Mexico. An orchestra provided music for dancing, and refreshments were served. The Texas lumbermen and their companions report a most enjoyable afternoon on this cruise, and all were enthusiastic in their praise of the courtesy extended by the Chicago manufacturers of Woodboard.

### Cement Price Reduced

Announcement of the reduction of the cost of any one of the materials used in building is gratifying to every member of the building industry, especially the material dealers. The Alpha Portland Cement Co., Easton, Pa., is sending out such an announcement. It follows:

The Alpha Portland Cement Co. recently made a reduction in the price of Alpha cement with a view of increasing the volume of immediate building.

As a further step toward confidence, we have guaranteed our price for contracts against a decline during the remainder of the year 1919. This will insure the lower price, if any, being applied to all unshipped portions of any contract at the time the new price takes effect.

In order to make this policy fully effective as to the object sought, it will be necessary for dealers to pass on to contractors the benefit of this guarantee, and necessary for the contractors, in turn, to pass on this protection to property owners. Unless this is done, it is obvious that the stimulation for immediate building activity will not be effected.

## “Marine Architecture” in a Summer Cottage

(Continued from page 55.)

This latter is a part of the equipment which is appreciated during the bathing season, when the bathers linger as long as possible and have to hurry to dress for dinner. For these staterooms, with washable rugs on the floors, make an admirable place to prepare for the beach and to return to afterwards, the outside doors making it unnecessary to track sand thru the living room.

Above these staterooms is an attic for the storage of the things which are best kept out of sight. This attic is reached by a little stairway up from the kitchen.

The cottage rests on concrete footings set deep in the sand of the lake shore, and is framed in ordinary fashion. The outside, except for a few courses of brown bungalow siding at the bottom, is covered with plaster board. On this was painted a heavy coat of white lead; and while this was still wet, heavy white duck was stretched over it. When dry, this was painted three coats of light buff. Wall board is also used on the inside walls and is covered with burlap. The joints were made with unusual care, so that the use of strips of wood, or other treatment, was not necessary.

All trim, inside and out, including doors, is white. The floors are of Georgia pine, oiled. The mantle and chimney are of a native brick in buff color.



## "BARCREST" Quality Shingles

Fine shingles of uniform quality play a most important part in Building. In the small house or bungalow everything depends on the quality of shingles used.

The "Barcrest" shingles are sawn from the finest live cedar—sorted into 12 grades—sizes 16", 18", 24" in length.

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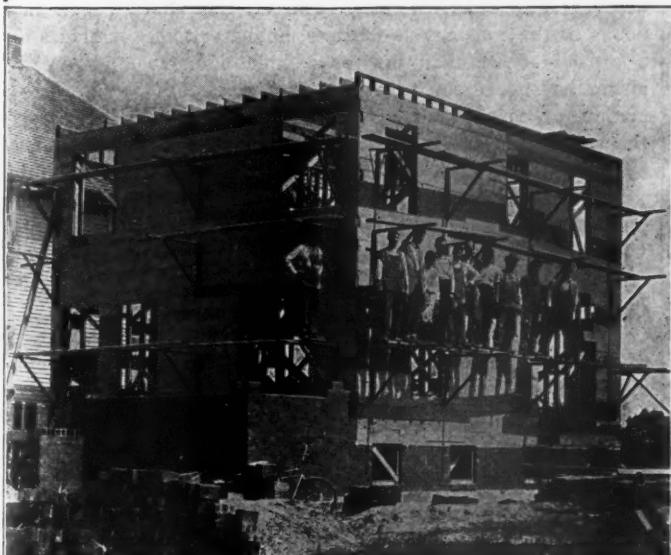
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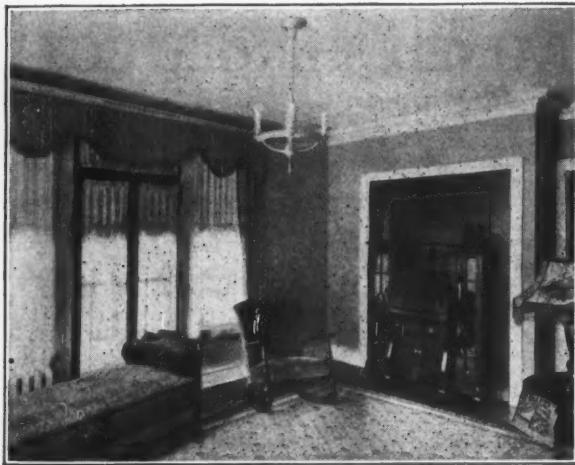
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Portal Wall Beds Received Gold Medal at  
Panama-Pacific International Exposition

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of American Builder, published monthly at Chicago, Ill., for April 1, 1919.

State of Illinois }ss.  
County of Cook }

Before me, a notary public in and for the state and county aforesaid, personally appeared E. L. Hatfield, who, having been duly sworn according to law, deposes and says that he is the business manager of the AMERICAN BUILDER, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, American Carpenter & Builder Company, Chicago, Ill.

Editor, Wm. A. Radford, Chicago, Ill.

Managing Editor, Bernard L. Johnson, Chicago, Ill.

Business Manager, E. L. Hatfield, Chicago, Ill.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock):

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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state):

There are no bonds, mortgages or other securities outstanding.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This information is required from daily publications only.)

E. L. HATFIELD, Business Manager.

Sworn to and subscribed before me this 26th day of March, 1919. (Seal)

MAME C. BRUSH.

(My commission expires April 29, 1923.)

+

## The Conclusion

"They say the kaiser is spending \$1,000 a week."

"Whew! They must be paying wood choppers a lot in Holland."—*Baltimore American*.



## WESTERN FACE BRICK

How neat, how beautiful and home-like this little residence appears. It is constructed of "Western" Gothic Full Range Mixture Face Brick. The effect in color is very harmonious—being a combination of reds and browns. More beautiful brick cannot be made or we would make them. Western Face Brick are made in a variety of colors and textures to suit the good taste of those who want something out of the ordinary.

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will help you do this.



It will cut perfect grooves any width either with or across the grain and makes the most intricate cutting seem easy.

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### Water Resistant Glues

Water resistant glues are of two general types, those made from blood albumen and those made from casein. All blood albumen glues are made directly from the raw ingredients at the time the glue is to be used. The manufacturers using these glues make them by their own secret formulas, and there are no published formulas available. Casein glues are made from casein, which is obtained from milk. They can be obtained in the prepared state ready for mixing with water, or they can be made directly from the ingredients at the time the glue is to be used. Directions for mixing the prepared glues can be obtained from the respective manufacturers or from the Forest Products Laboratory, Madison, Wis.

The water resistant qualities of casein and blood glues are well demonstrated by the acceptance test imposed on plywood manufactured with these glues for use in airplanes. Samples of the plywood are boiled in water for eight hours or soaked in cold water for ten days. An acceptable product will show no separation of the plies under such treatment.

The shearing strength of casein and blood glues in plywood for airplane use is required to be at least 150 pounds per square inch. Most of the plywood tested at the Forest Products Laboratory showed values considerably higher than this minimum requirement. In general, veneer panels glued with blood glue show higher average strength under the varying conditions than those glued with casein glues. It seems possible, however, that casein glues will in time be developed which will be the equal of blood albumen glues in this respect.

Both casein and blood glues are materially weaker wet than dry. Casein glues tested wet commonly have 20 to 40

per cent of their dry plywood shear strength, and blood glues 50 to 75 per cent. When plywood using these glues is re-dried after being soaked, however, the original strength of the glue is very largely recovered.

Blood glues are not at present commonly used for gluing anything thicker than veneer. Casein glues are used for gluing all thicknesses. Casein glue test joints, using blocks of maple with the grain running in the same direction, commonly have a shearing strength of 2,000 to 2,500 pounds per square inch.

Blood albumen glue joints must be made with a "hot press" (having hollow plates heated with steam); a few minutes' pressure is sufficient. Casein glue requires only an ordinary press, such as is used, with or without retaining clamps, for animal and vegetable glues.

The spreading equipment used for vegetable glues is suitable for both casein and blood albumen glues.

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You don't have to keep your eyes on a Caldwell Cypress Tank. You need have no fears of breakage or leaks. It's like a good workman — on the job and giving honest service every day in the year.

And it's all because the Caldwell Tank is built of the highest grade materials according to engineering principles by experienced tank builders who realize that a good tank is more than a carpenter's job. As a guarantee against leakage, every joint is machine-planed with full bearing and the hoops are spaced so that no hoop is overstressed.

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42-937



## birch interior trim

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Building is starting up rapidly all over the country and the smart ones will get the first plums.

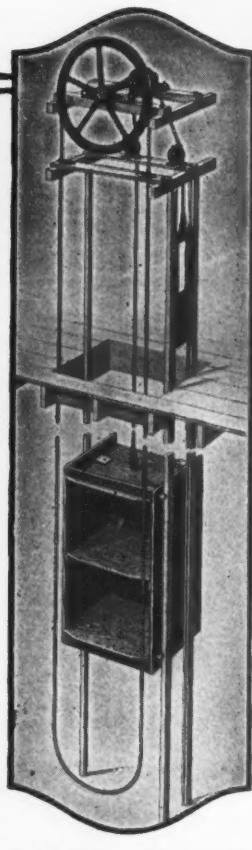
Knowledge counts—brighten up your knowledge of that beautiful and favorite hardwood, birch, by sending for our set of six free finished samples and the handsome birch book. We'll send them to your customers too if you'll mention their names. Let's all pull together. Write now.

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This is the busiest building season in many years and the Jaeger Junior will boost your profits.

Make the most of your opportunity.

Write Today and Ask for  
Catalog Number 103



**JAEGER MACHINE COMPANY**  
COLUMBUS, OHIO

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WITH the war over and spring with her arms wide open—people everywhere are beginning to build—to improve—to replace and to repair.

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For Low Up-Keep Cost—a mixer that is sturdy, reliable, easy to run, easy to clean, easy to understand, easy to buy and easy to keep.

When you buy a STEWART Mixer—you get full value for your money, you get a machine well designed, well balanced and well made. The principle is right—the work is right and you get right profit from its operation.

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(Formerly Cement Tile Machinery Co.)  
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Every step in the manufacture is handled by men skilled in their Art. Each process is handled by experts. Every saw is carefully inspected and tested before being forwarded to the next department. When the final test and inspection has been made, Geo. H. Bishop & Co. place their seal of warranty on the saw and you have the Product of the Greatest Saw-Making Organization in the World.

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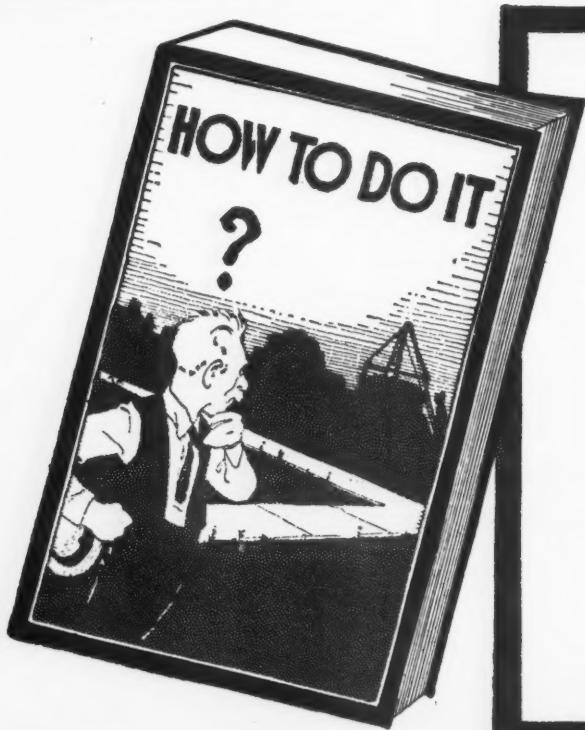
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—a book of 156 building "Kinks" that will save you time, money, sleep, labor, gray hairs and profanity.

A "kink" is a short cut—a bright idea—a brilliant thought—an inspiration—a new way of solving an everyday difficulty—a solution of a difficulty that would otherwise drive a man to drink, if he could find the drink!

In 156 instances Old Man Trouble has tried

to gum up a construction job, and some smart fellow has beaten him—beaten him by rigging up a hoist arrangement for helping an excavating job, by fixing a ding-a-fuss for measuring water for mixing, by moving forms by a trolley system, by evolving a new idea in manhole construction, or building a thungumbob that enables a concrete mixer to drive piles.

*Now you don't dare resist this announcement. You could get along without this book, but why suffer? Send 50c—if you don't like the book, we'll buy it back!*

Concrete-Cement Age Pub. Co.

317 New Telegraph Bldg.  
DETROIT, MICH.

# SHORT TALKS WITH OUR SUBSCRIBERS

THIS Home Building Number is designed to help the AMERICAN BUILDER family and all the various civic organizations that are promoting home building to give the American families better homes—better architecturally, better structurally and better from the standpoint of convenience and comfort. The many designs shown in the AMERICAN BUILDER embody these features. They are modern in every respect; they are the result of the experience of the country's best architects, and they can be used with the assurance that the client will get the maximum in satisfaction and comfort for his money. \*

A SIDE from the profit that members of the building industry may gain from inducing people to build their homes, we all want to see a great era of home building. We know that the man who owns his home is the best citizen; we know that the best interests of our country and of ourselves lie in having this a nation of home owners. Every family that we provide with a home means an additional safeguard to the integrity and prosperity of the United States, of which each one of us is a part.

WHEN a man wants a thing hard enough usually he'll get it. The same, only more so, applies to a woman. There is nothing that so inspires a man or a woman to want a home as a design of a beautiful

house, with a conveniently arranged interior. That's why the AMERICAN BUILDER has added the Portfolio of Blue Printed Beautiful Homes. These illustrations will stimulate the latent desire of everyone to build a home. \*

THE advantages a home owner has over his less fortunate brother, the renter, are many. His money has not only secured him a comfortable place in which to live, but he has something of value to show for his expenditures. The home owner is a substantial member of his community. He has an investment that leads him to take an active interest in the affairs of his community. He is a fixture, rather than a transient, and for that reason has both business and social opportunities that the man who rents has not. These are facts that can be profitably pointed out to the prospective home builder. \*

WE in a quiet way can do a great deal to help home builders. All of us, contractors, carpenters and builders, material men and lumber dealers, have learned many valuable things about home building from handling the plans of the best architects. We can help prospective home builders with suggestions that will give them homes of which they will be proud and of which the builder will be proud. This is the sort of co-operation that will be appreciated.

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**BUILDING IS BOOMING**

At this time there is a shortage of homes of nearly a million, to which must be added the normal requirements for the balance of this year. The pressure for construction is being felt; the supply of labor is adequate and the resumption of home building on a large scale is possible.

DRIVER HELD AFTER ACCIDENT

Frank Tracy, 33 1/2, was for the East... Company, was arrested under the charge of operating a motor vehicle under the influence of alcohol.

NAV

At nett, the... Court

The necessity of signing the treaty

AAA

AAA

**The**  
**"Build It Now"**

idea is growing. In normal times, under normal conditions, it required the building of about 600,000 homes annually. For over two years normal construction has been suspended, therefore, over 1,000,000 homes are needed. This means more building. Be prepared for more work and buy

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Write for our catalog which illustrates and describes  
**"A Perfect Saw for Every Purpose"**

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